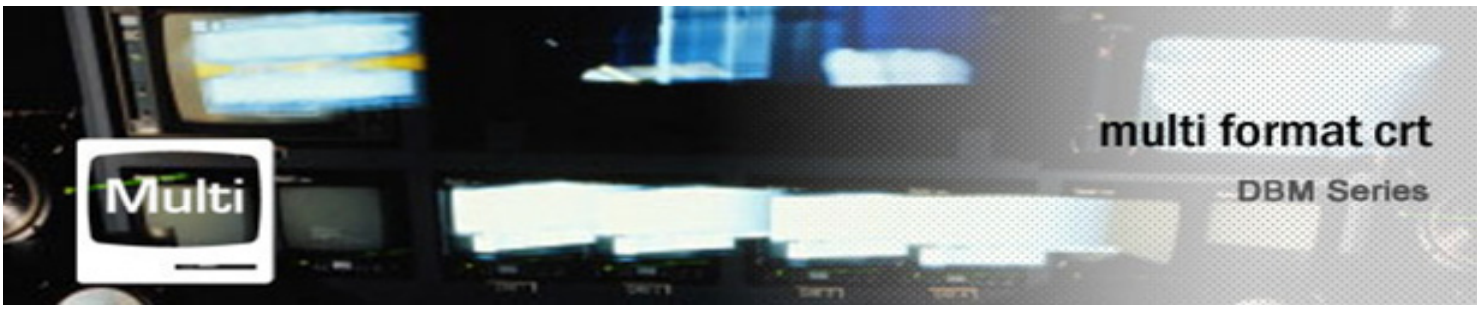
TVLogic



COLOR MONITOR

CONFIDENTIAL

Model

DBM-150MD ,DBM-150SA

DBM-150SD , DBM-150HD

SERVICE Manual

COLOR MONITOR

D B M - 1 5 0

C O N T E N T S

1. Handling Explanation
2. Service Information
3. SERVICE MAN MENU Ability Explanation
4. Drafting Adjustment
5. Block Diagram
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For Your Safety

Intended Use

The DBM-150 color video monitor is designed to display pictures generated from broadcast systems. Do not use this monitor for other purposes.

Read Instructions

Before operating this color display monitor, DBM-150, users should read and understand this User Manual thoroughly. Retain this manual for future reference.

Inspect before operating

To prevent unexpected problems and to maximize the functionality of this equipment, look over the unit before operating. Do not operate this unit if defects are found.

Warning: Risk of electric shock

There are high voltage points within this product's enclosure that may cause a fire or electric shock. Do not remove cover or back! Refer servicing to qualified service personnel.

Warning: Liquids and Chemicals

To reduce the risk of a fire or electric shock do not expose this equipment to rain or moisture and keep this equipment away from all liquids. Never allow liquids of any kind, chemicals, and other objects to spill through cabinet slots. If spillage occurs unplug the unit from the electric outlet and contact your Dealer or Customer Service Center. Do not place any liquid containers on top of the equipment.

Modifications

Never disassemble or make any unauthorized modifications to this unit. For service concerns please contact your authorized reseller or Customer Service Center.

Disposal of Old Electrical & Electronic Equipment

(Applicable in the European Union and other European countries with esparate collection systems)

This symbol on the product or on its packing in dicates that this product shall not be treated as household waste. Instead it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment. By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handling of this product. The recycling of materials will help to conserve natural resources.

C O N T E N T S

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Precautions

To preserve optimal performance of this equipment

Magnetic Cautions

・Do not place the unit near any objects which generate magnetism. Magnetism will cause picture bounce, oscillations or picture discoloration.

・The picture may become fuzzy or the colors may not reproduce correctly due to the earth's magnetism. This depends on the direction that the unit is installed. This is not an equipment failure. In such a case, simply turn off and on or push the DEGAUSS button to resolve the issue.

※ For details about the DEGAUSS button, see "DEGAUSS button" on page 8.

Picture Tube Cautions

・For dirt or stains, wipe the surface of the panel gently with a clean soft cloth that has been lightly dampened with a well-diluted soft detergent and wrung out thoroughly, then dry it off with a dry cloth. Avoid excessive moisture. Do not spray detergent or other cleaners directly on the screen.

・The surface of the CRT is easily scratched: therefore, do not rub or touch the surface of the CRT.

・To prevent damage to the surface of the screen do not use strong solvents such as aerosol cleaners, alkaline detergents, alcohols, benzene, thinners.

Cleaning Cautions

・Turn off and unplug the unit before cleaning.

・When dusting or polishing the cabinet, use a clean soft cloth dampened with a water-diluted mild detergent (water: soap = 6:1) and wrung out thoroughly, then wipe dry with a soft clean cloth. Do not spray detergent or other cleaners directly on unit.

・ Never use strong solvents such as thinner, benzene, and other petroleum-based cleaners.

Features

Image

Resolution
Fine Dot Pitch Shadow Mask provides a center resolution of more than 800 Lines.

Comb Filter
Comb filter removes cross color interference (rainbow phenomenon at letters) and color noise (color spread) to display crisp and clear images.

Beam current feedback Circuit
The beam current feedback Circuit maintains a constant color temperature over long periods of time.

2 Color Systems
This unit automatically adjusts to respond appropriately to NTSC and PAL Color Systems.

Input

Analog RGB/Component Input
You can input analog RGB, component signals(Y, Pb, Pr). Pushing the COMPONENT button on the front panel, then you can select RGB/COMPONENT signal on the OSD menu.

Y/C Input
You can input brightness signal(Y) and color signal(C) separately to reduce color spreads or blinking so that you can get the clear images.

External Synchronization Signal Input-terminal
You can input synchronization signals from external synchronization signal generator. The external synchronization signal input can be selected by pushing the EXIT button when inputting RGB/COMPONENT.

Auto Termination (
The Input-terminal on the rear panel is terminated automatically if it is not connected to an output-terminal. When it is connected to an output-terminal via a cable, the internal auto termination is cancelled automatically and the signals inputted at the input-terminal are looped through to the output-terminal.

SDI Input
You can input SDI signals from video equipment and display these signals by selecting CVBS/SDI button on the front panel.

Functions

Under Scan Mode

This function enables you to see the whole picture by displaying signals on the off-screen.
※ Red, green, and blue lines are displayed on the top of the screen when in Under Scan mode. These lines are generated by the picture tube as part of its normal operation and are not part of the actual picture.

Auto/Manual Degauss

The picture tube is degaussed automatically when powered on. The manual degauss is enabled by pushing the DEGAUSS button.

On-Screen Menu

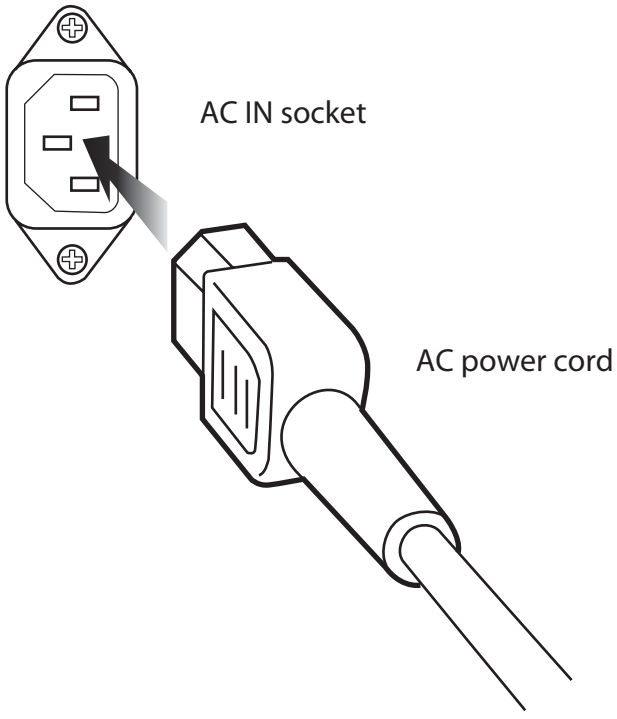
On-screen menus enable users to make the most desirable adjustment and settings for the systems to be connected.

Connection

Power cord connection

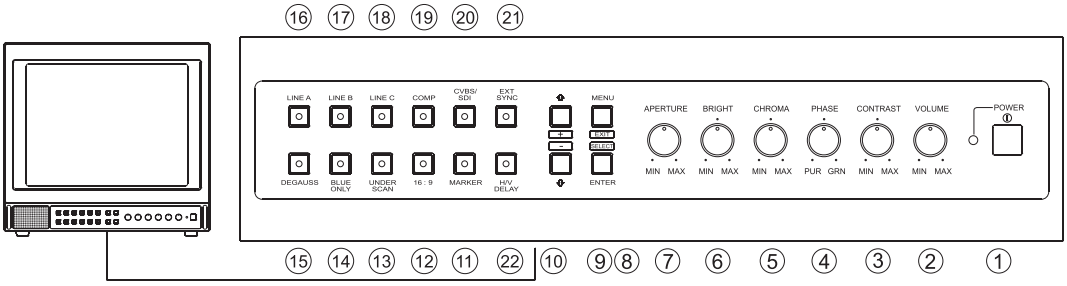
When you connect the power cord

Connect the supplied AC power cord to the AC IN socket at the rear panel.



Location and Function of Parts

Front Panel



1 Power Switch and LED

LED lights up when the power is turned on by pressing the power switch. When the switch is pressed once again, the power is turned off and LED is turned off.

2 Volume VR

This is to control the volume level.

3 Contrast VR

This is to adjust the contrast ratio.

4 Phase VR

This is to control the phase value. Turning to the right makes green color tone and turning to the left makes red color tone.

5 Chroma VR

This is to adjust the saturation. Turning to the right makes strong chroma and turning to the left makes light chroma.

※ Chroma adjustment does not work with RGB signals.

6 Bright VR

This is to control the degree of brightness.

7 Aperture VR

This is to adjust the picture sharpness. Turning to the right makes it clear and turning to the left makes it soft.

8 Menu/Exit Button

This is to display the menus and then to go back to the normal picture.

9 Enter/Select button

This is to execute the items selected and adjust settings.

10 ↑/+ (move up/adjust) button

↓/- (move down/adjust) button

This is to move the cursor and to adjust the setting and adjustment values.

11 Marker and LED

When this button is pushed in the 4:3 marker is displayed in the 16:9 screen.

12 16:9 button and LED

This is to set an aspect ratio of 4:3 or 16:9.

13 Underscan button and LED

When this button is pushed in, the picture is underscanned by 7%, and four ends of the raster are displayed on the screen.

14 Blue Only button and LED

When this button is pushed in, red and green signals are cut, and only the blue signal is displayed. It makes it easy to adjust chroma and phase, and to check VCR noise.

15 Degauss button and LED

Press this button once to degauss manually. To degauss again, wait at least 10 minutes.

16 Line A button and LED

The signals of Line A or SDI-A input can be viewed according to the CVBS/SDI button (20) setting.

17 Line B button and LED

The signals of line B or SDI-B input can be viewed according to the CVBS/SDI button (20) setting.

18 Line C button and LED

The signals of line C input (S-VIDEO) can be viewed.

19 COMPONENT button and LED

The signals of component input can be viewed.

20 CVBS/SDI and LED

With LED ON the SDI signal is displayed, and with LED OFF the CVBS signal is displayed.

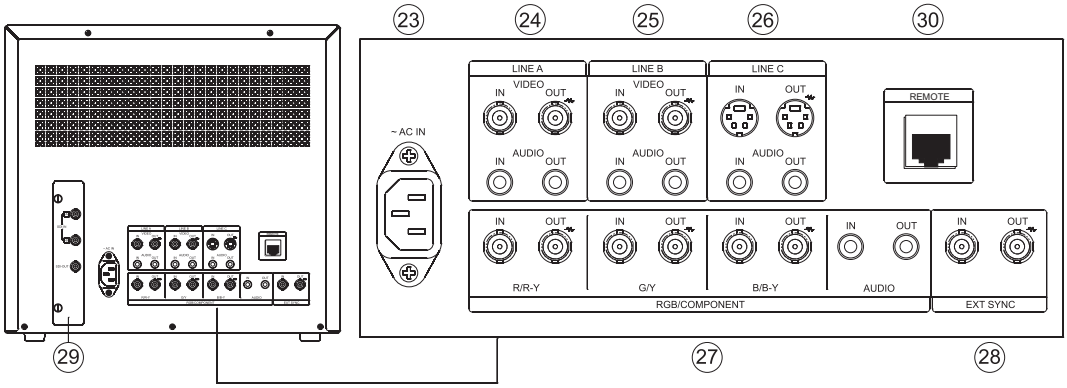
21 EXT SYNC button and LED

Press this button when external sync signals are synchronized from the EXT SYNC input terminals. The EXT SYNC button is operated only when COMPONENT/RGB input.

22 H/V DELAY and LED

You can verify the part of sync status by delaying the horizontal and vertical sync.

Rear Panel



23 AC IN power socket

Connect the supplied AC power cord

24 LINE A IN/OUT

These connectors are for composite video signals and audio signal input and for Loop Through for each. This can be viewed by pushing the LINE A button on the front panel.

VIDEO IN/OUT (BNC type)

These connectors are for composite video input and output. Connect the input and output terminals of the composite image of VTR, video cameras, or other monitors.

AUDIO IN/OUT (Pin Jack)

These connectors are for audio signal input and output. Connect the audio input and output terminals of VTR or other equipment.

25 LINE B IN/OUT

These connectors are for composite video signals and audio signal input and for Loop Through for each. This can be viewed by pushing the LINE B button on the front panel.

VIDEO IN/OUT (BNC type)

These connectors are for composite video input and output. Connect the input and output terminals of the composite image of VTR, video cameras, or other monitors.

AUDIO IN/OUT (Pin Jack)
These connectors are for audio signal input and output. Connect the audio input and output terminals of VTR or other equipment.

26 LINE C IN/OUT
These connectors are for Y/C separate signals and audio signal LINE input and for Loop Through for each. This can be viewed by pushing the LINE C button on the front panel.

Y/C IN/OUT (4Pin Mini DIN)
These connectors are for Y/C separate input and output. Connect the input and output terminals of the image of VTR, video cameras, or other monitors.
AUDIO IN/OUT (Pin Jack)
These connectors are for audio signal input and output. Connect the audio input and output terminals of VTR or other equipment.

27 RGB/COMPONENT IN/OUT
These connectors are for analog RGB and components(Y, Pb, & Pr) input and for Loop Through for each. This can be viewed by pushing the RGB/COMPONENT button on the front panel.

IN/OUT (BNC type)
These connectors are for analog RGB and components(Y, Pb, & Pr) input and output. When inputting, it is operated by sync signals included in G/Y signals.
AUDIO IN/OUT (Pin Jack)
These connectors are for audio input and output. Connect the audio input and output of VTR and other equipment.

28 EXT SYNC IN/OUT
These connectors are for external sync signal input and Loop Through for each. This can be operated by pushing the EXT SYNC button on the front panel.

IN/OUT (BNC type)
These connectors are for external sync signal input and output. The IN terminal is for the standard input signals from the signal generator of the external sync signal. Connect the OUT terminal of this monitor with the external sync signal IN terminal of other video equipment to be operated with this monitor.

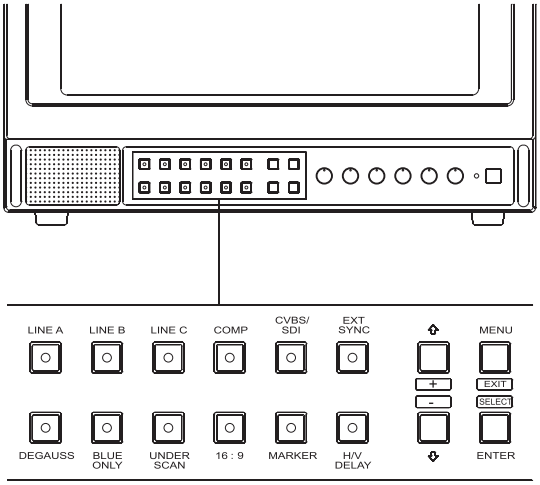
29 SDI IN/OUT
These connectors are for SDI IN/OUT. You can select SDI A or B by selecting the CVBS/SDI Button on the front panel. The selected SDI input signal is outputted through the reclocked output connector.

30 REMOTE
It allows the user to make necessary remote adjustments easily without touching the buttons on the front panel.

How to use the on-screen menus

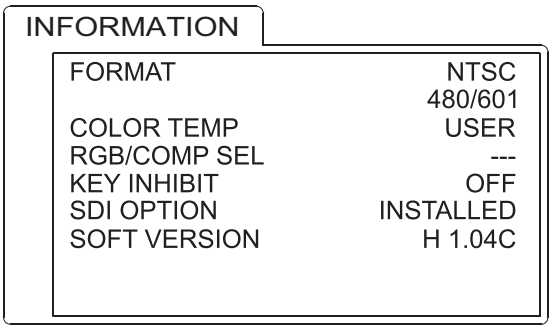
Users can adjust picture, select input signals, change initial installation, and adjust other things with the on-screen menus. Users should follow the steps described below.

※ For details about the menu items, see [How to adjust on the screen menus] on page 13.

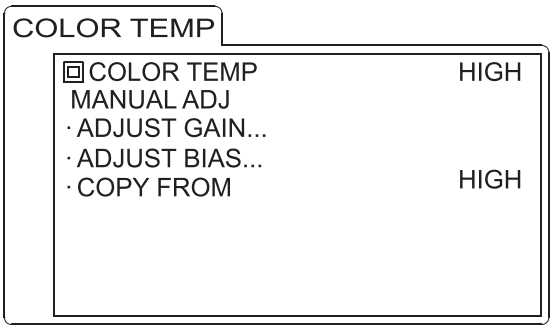


1. Press the MENU/EXIT button.

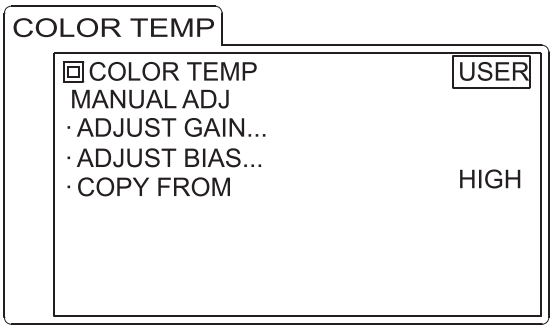
The INFORMATION STATUS list is displayed on the screen.



2. Press the ↑/+, ↓/- buttons to select the menu and press the ENTER/SELECT button.
The icon of the selected menu page displays in yellow color and a cursor moves to the selected items (middle area).



3. Press the ↑/+, ↓/- button to select the item and press the ENTER/SELECT button.
A cursor moves to the right side area of the selected item.



4. Adjust and set the selected item.
When you change the setting and adjustment values of the item:
Press the ↑/+ button to increase the setting and adjustment values.
Press the ↓/- button to decrease the setting and adjustment values.
When you press the ENTER/SELECT button, the setting is stored, then the display returns to the previous picture.

When you select the setting:
Press the ↑/+, ↓/- buttons to select the setting and press the ENTER/SELECT button.

※ Items in blue cannot be adjusted in the settings menu. Items in white cab be adjusted.

To exit the menus
Press the MENU/EXIT button.

To save the settings
The settings are saved automatically.

How to adjust the on-screen menus

Items

The screen menus are as follows:

INFORMATION STATUS
It displays the setting status. (setting and adjustment not possible)

COLOR TEMP
It sets the color temperature.

FUNCTION CONTROL
It sets the desired function of monitor.

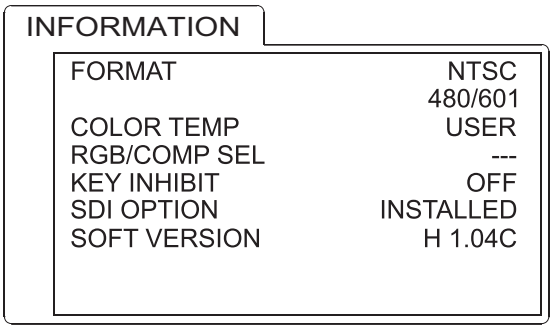
SUB CONTROL
It sets the CHROMA, PHASE, SUB-CONTRAST and SUB-BRIGHT.

REMOTE PARALLEL
It sets the pin functions of the remote jack at the rear panel.

Adjustment and setting

INFORMATION STATUS
It displays the current setting.

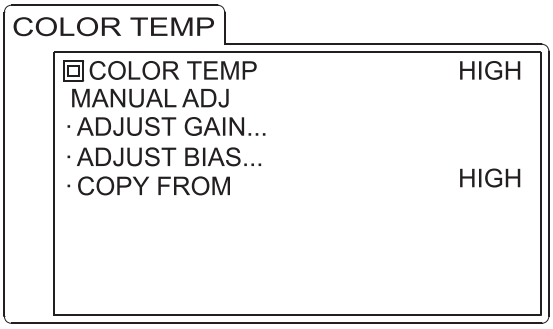
SUB MENU	SETTING
FORMAT	Displays the FORMAT(NTSC/PAL) of the input signals.
COLOR TEMP	Displays the setting of the color temperature.
RGB/COMP SEL	Displays the setting(RGB/COMPONENT) when RGB or COMPONENT input.
KEY INHIBIT	Displays current setting of key inhibit function.

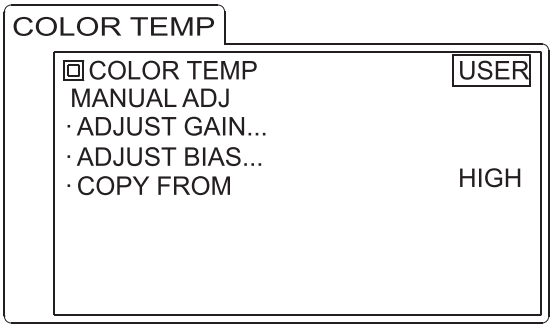


COLOR TEMP

It adjusts the white balance. To adjust color temperature, a probe is required.

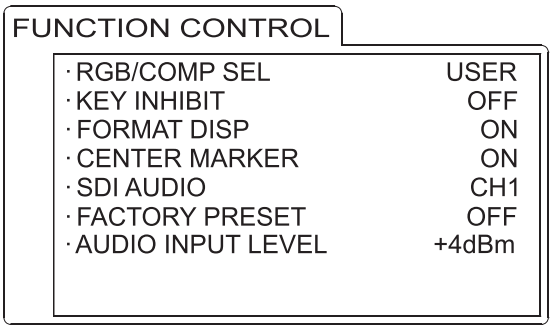
USER MENU	SETTING
COLOR TEMP	Adjusts the color temperature as [LOW], [HIGH], [USER]. Adjusts the other color temperature available in the user setting. (a probe required.) ※ The USER available from 5,000K to 10,000K. ※ The USER adjustment setting can be set in the COLOR TEMP menu of the USER SERVICE setting.
USER COLOR TEMP	The level of color temperature is operated when select USER adjustment setting in the COLOR TEMP menu. GAIN adjustment: Adjusts COLOR Balance (GAIN) of the user setting. BIAS adjustment: Adjusts COLOR Balance (BIAS) of the user setting. Standard COPY: Brings up LOW and HIGH parameter.





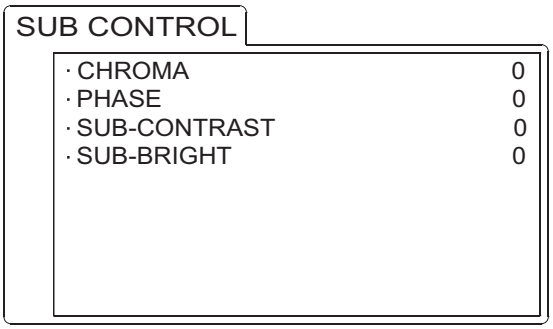
FUNCTION CONTROL

SUB MENU	SETTING
RGB/COMP SEL	sets signal RGB and component input. RGB: select input signal in RGB COMP: select input signal in component
Key Inhibit	lock the function key and volume at the front panel. on: lock off: unlock
FORMAT DISP	Sets how the input type/format is displayed. on: displays permanently auto: displays 10 sec. off: input format
Center Marker	Sets the center marker on/off when marker button is selected on the front panel. off: will not display center marker on: displays center marker
SDI Audio	selects SDI Audio channel to output. OFF: off the SDI Audio Ch1~Ch16: Selects out SDI Audio channels
Factory Reset	Returns all settings to factory default settings.
Audio input level	selects the desired Audio signal volume level. -5dBm: selects Audio Volume in low +4dBm: selects Audio Volume in high ※ factory preset is +4dBm



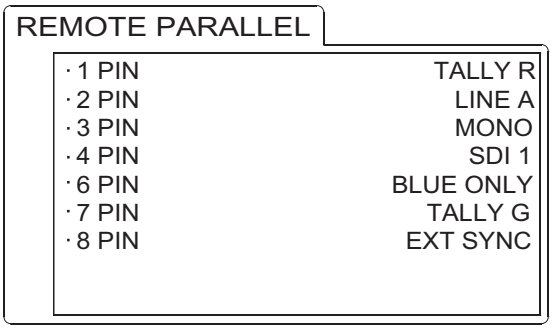
SUB CONTROL

SUB MENU	SETTING
CHROMA	adjusts the saturation.
PHASE	adjusts the phase value.
SUB-CONTRAST	adjusts the contrast ratio.
SUB-BRIGHT	adjusts the degree of brightness.



REMOTE PARALLEL

OSD	FEATURE	HIGH→LOW	LOW→HIGH
---	-	-	-
LINE A	o	LINE A	-
LINE B	o	LINE B	-
LINE C	o	LINE C	-
RGB	o	RGB	-
COMPONENT	o	COMPONENT	-
SDI 1	o	SDI A	-
SDI 2	o	SDI B	-
TALLY R	TALLY RED ON/OFF	TALLY RED ON	TALLY RED OFF
TALLY G	TALLY GREEN ON/OFF	TALLY GREEN ON	TALLY GREEN OFF
TALLY AMBER	TALLY RED, GREEN ON/OFF	TALLY AMBER ON	TALLY AMBER OFF
UNDERSCAN	UNDERSCAN ON/OFF	ON (UNDERSCAN)	OFF (OVERSCAN)
16:9	16:9 aspect ratio ON/OFF	ON	OFF
4:3	4:3 aspect ratio ON/OFF	ON	OFF
EXT SYNC	external SYNC signals enable/disable	external SYNC	internal SYNC
BLUE ONLY	BLUE ONLY ON/OFF	ON	OFF
MONO	MONO ON/OFF	ON	OFF
VOLUME	VOLUME ON/OFF	OFF	ON
MARKER	MARKER ON/OFF	ON	OFF
CENTER MARKER	CENTER MARKER ON/OFF	ON	OFF
POWER ON/OFF	POWER ON/OFF	OFF	ON



TROUBLESHOOTING

Before contacting technical support check for these common mistakes.

▪ Green and purple picture
→ Press the COMP and RGB buttons to make sure the input signals are selected properly.

▪ The EXT SYNC button is not working.
→ Keep pressing the EXT SYNC button to light LED.

WARRANTY

1) If you have problems with this equipment please reveiw the manual first to try and selfdiagnosis simple errors.

2) If you still have problems with this equipment please contact your local reseller or Customer Service Center.

3) This product is warranted (repairs and replacements) for 1 year from the date of invoice from an Authorized Reseller to the end user. During this warranty period, the repairs and replacements are serviced at no charge to the original owner, subject to the limitations listed.

① Damages, defects or failure caused by or resulting from fire, flood, or acts of God.
② Damages, defects or failure caused by misuse, abuse, neglect, or improper operation of the unit.
③ Unauthorized modification (repairs or alteration) by a non-TV Logic service facility.

4) Repairs can be provided for a service charge after the warranty period. When you contact the Customer Service, let them know the following:

Model: DBM-150
Serial Number:
Trouble condition: (in detail possible)
Date of purchase: (the date of invoice)

SPECIFICATIONS

GENERAL

CRT Type: 15 inch Shadow mask tube (P22 phosphor)
Power requirement: AC 100～240V, 50/60 Hz
Power consumption: maximum 90W 1.3～0.6A
Dimensions (Width x Height x Depth):
365mm x 335mm x 387 mm (14.6 in x 13.4 in x 15.5 in)
Weight: 17.5 kg (38.6 lbs)

INPUT SIGNAL FORMAT

COMPOSITE: NTSC/PAL
COMPONENT/SDI: 480i(59.94), 576i(50), 1080i(60/59.94) - ONLY DBM-150HD

INPUT AND OUTPUT

Input Connectors

Line A
- Video input BNC type (1)
  - 1Vp-p ± 6dB Negative sync
- Audio input Pin Jack (1)
  - -5dBu 47kΩ more

Line B
- Video input BNC type (1)
  - 1Vp-p ± 6dB Negative sync
- Audio input Pin Jack (1)
  - -5dBu 47kΩ more

Line C
- Y/C input Mini DIN 8-Pin (1)
- Audio input Pin Jack (1)
  - -5dBu 47kΩ more

RGB/COMPONENT
- RGB/COMPONENT input BNC (3)
- RGB Input 0.7Vp-p ± 6dB
  - (Sync on Green 0.3Bp-p Negative sync)
- COMPONENT input 0.7Vp-p ± 6dB
  - (In 75% Chrominance standard color bar signals)

Audio input Pin Jack (1)
-5dBu 47kΩ more

EXTERNAL SYNC INPUT
BNC type (1) 0.3 ~ 8Vp-p
Positive/negative tri-level sync signal input or negative bi-level sync signal input
SDI A,B input BNC type (2)

Output Connectors

LINE A
Video output BNC type (1)
Loop through, 75Ω auto terminating feature attached
Audio output Pin Jack (1)
Loop through

LINE B
Video output BNC type (1)
Loop through, 75Ω auto terminating feature attached
Audio output Pin Jack (1)
Loop through

LINE C
Y/C output 4Pin Mini DIN (1)
Loop through, 75Ω auto terminating feature attached
(Available when power on input only)
Audio output Pin Jack (1)
Loop through

RGB/COMPONENT
RGB/COMPONENT output BNC (3)
Loop through, 75Ω auto terminating feature attached
Audio output Pin Jack (1)
Loop through

EXTERNAL Sync BNC type
Loop through, 75Ω auto terminating feature attached

SDI Output BNC type (1)
Active through, 75Ω

INTERNAL SPEAKERS
2W (MONO)

VIDEO SIGNALS

FREQUENCY RESPONSE
- 50Hz ～10MHz (0dB/-3dB)
- Aperture compensation
- OFF: 0dB
- On: 2～ 6dB

PICTURE PERFORMANCE

NORMAL SCAN
- 7% overscan of CRT effective screen area

UNDERSCAN
- 7% underscan of CRT effective screen area

LINEARITY
- H: less than 2%
- V: less than 2%

COLOR TEMPERATURE
- HIGH(D93), LOW(D65)
- USER(Adjustable to other color temperatures 5000K ～10000K)

CONVERGENCE ERROR
- Central area: less than 0.4 mm
- Peripheral area: less than 0.5 mm

RASTER SIZE STABILITY
- H: 1.0 %
- V: 1.0 %

RESOLUTION (at screen center)
- 800 TV Lines

OPERATING CONDITIONS

Temperature: 0°C to 40°C (32°F ～104°F)
Humidity: less than 30 to 85 % (no condensation)
Pressure: 700 to 1060 hPa

STORAGE AND TRANSPORT CONDITIONS

Temperature: -10°C to 40°C (14°F ～104°F)
Humidity: 0 to 90 %
Pressure: 700 to 1060 hPa

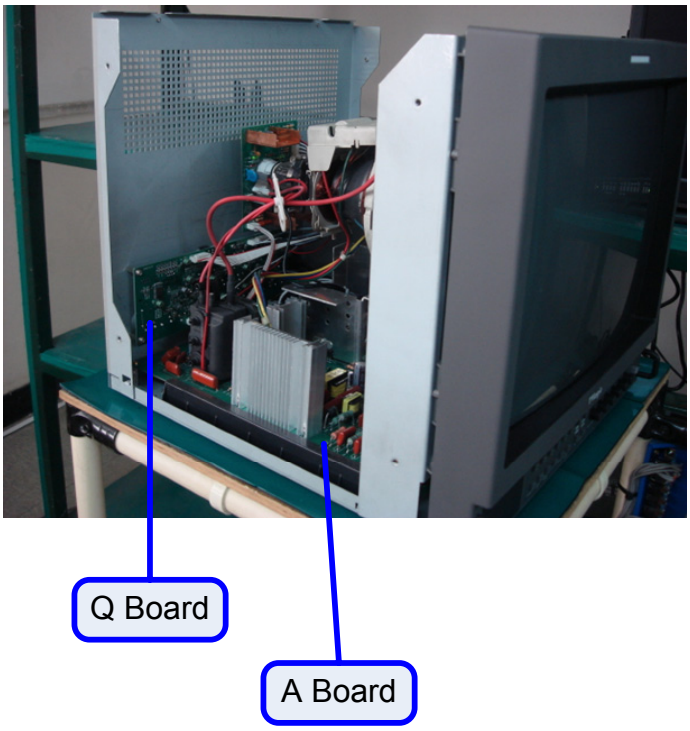
ACCESSORIES SUPPLIED

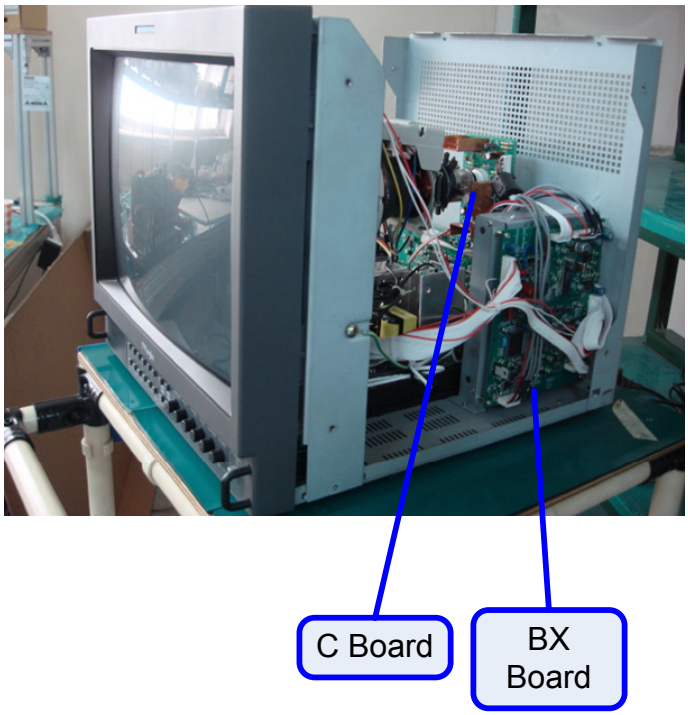
AC power cord (1)
User manual (1)

Design and specifications may be changed without notice.

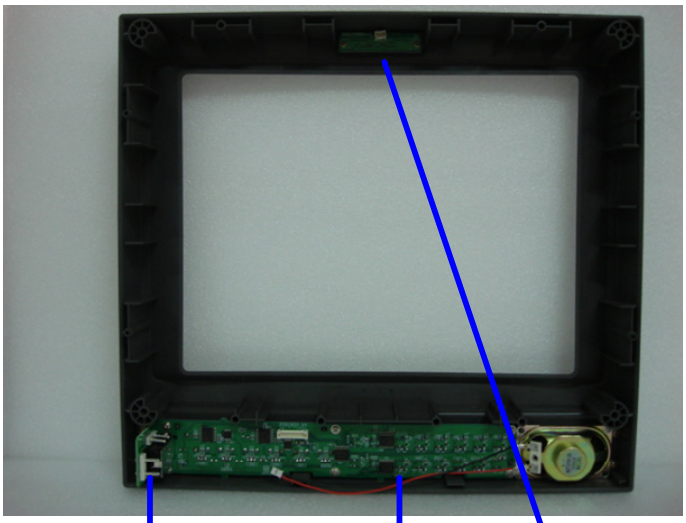
2. SERVICE INFORMATION

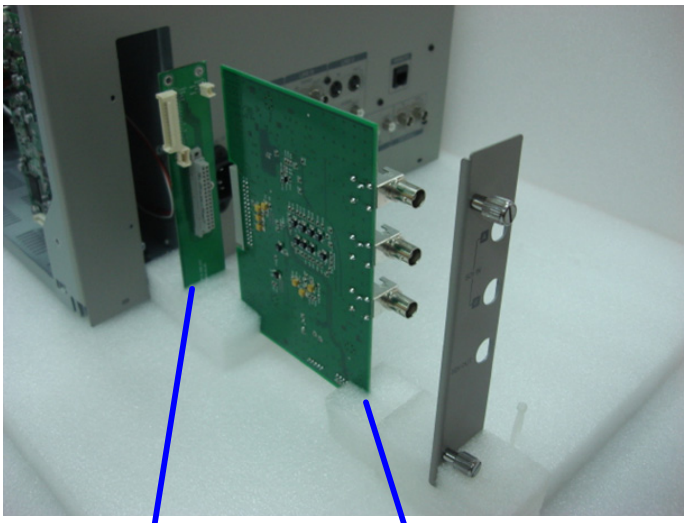
2-1-1. Board Lay out



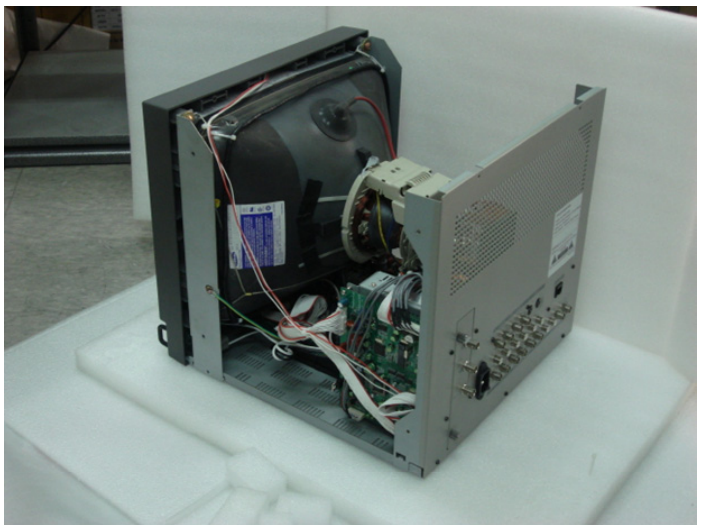


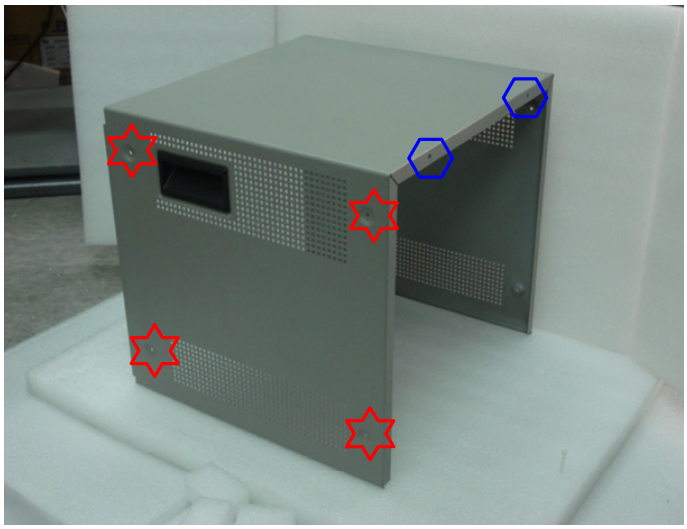
2-1-2. Board Lay out





2-2-1. TOP COVER Reassembly

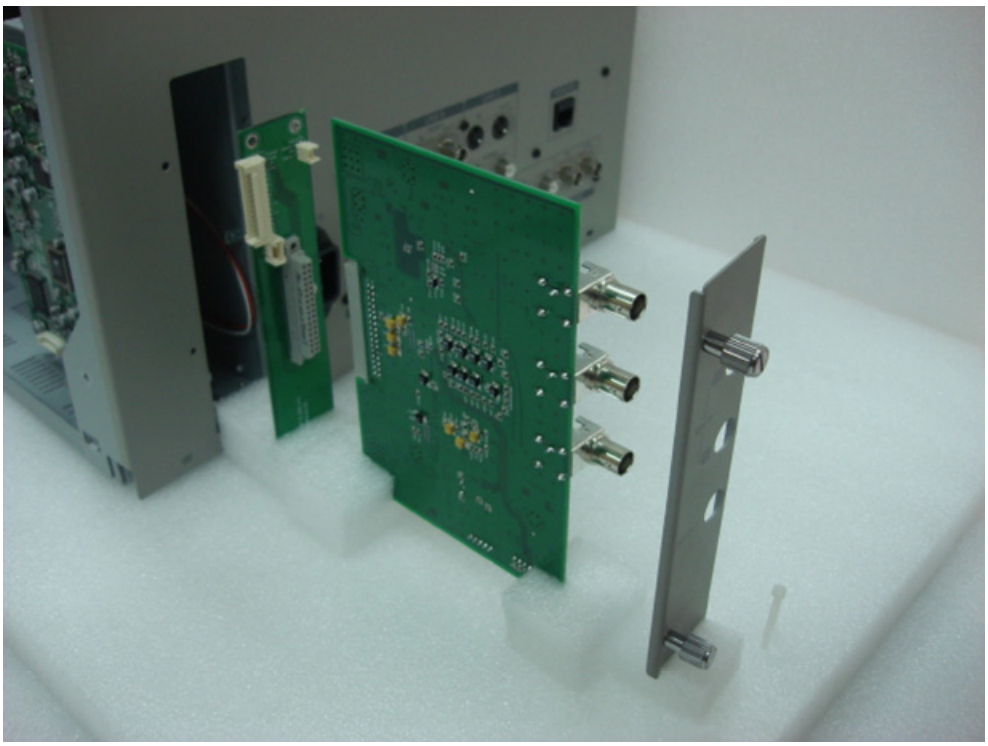




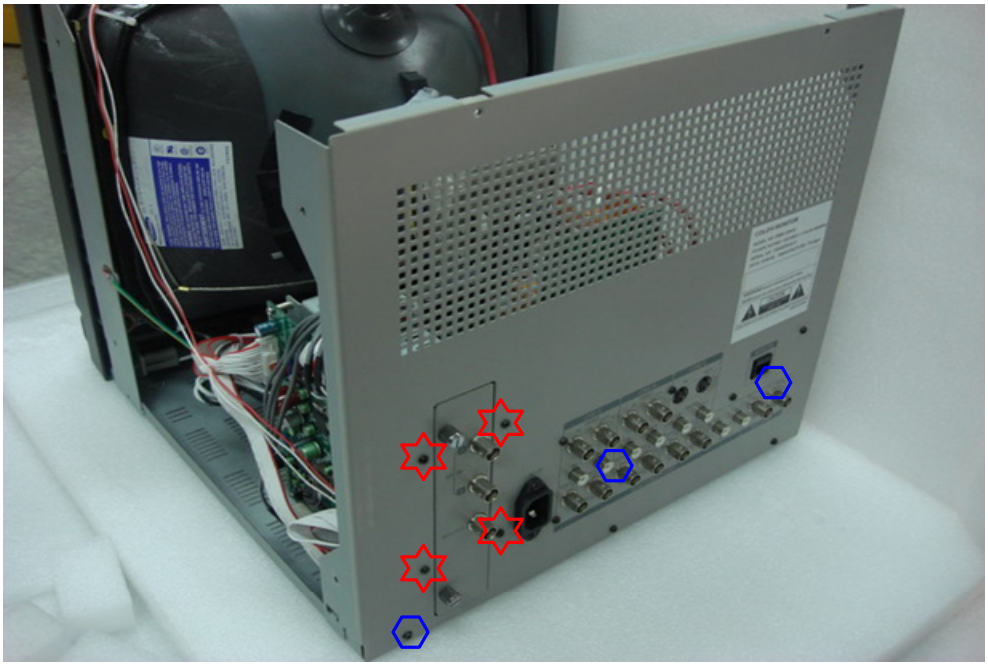
X 8 : TH M4x8

X 2 : PH ø3x6

2-2-2. SDI BLOCK and COVER Reassembly



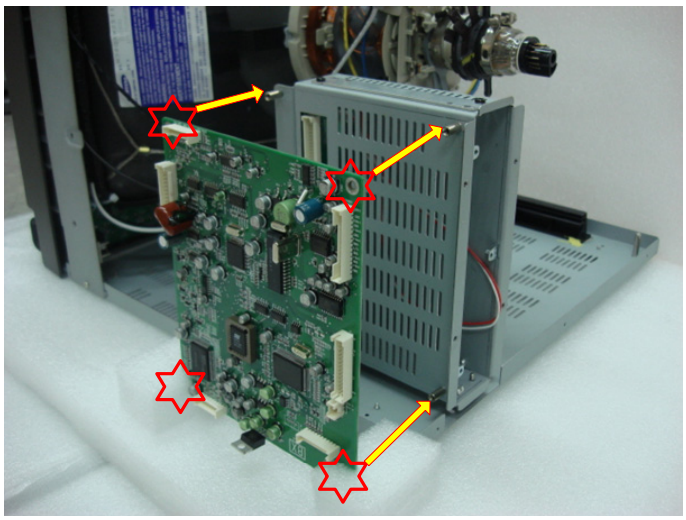
2-2-3. BACK COVER Reassembly



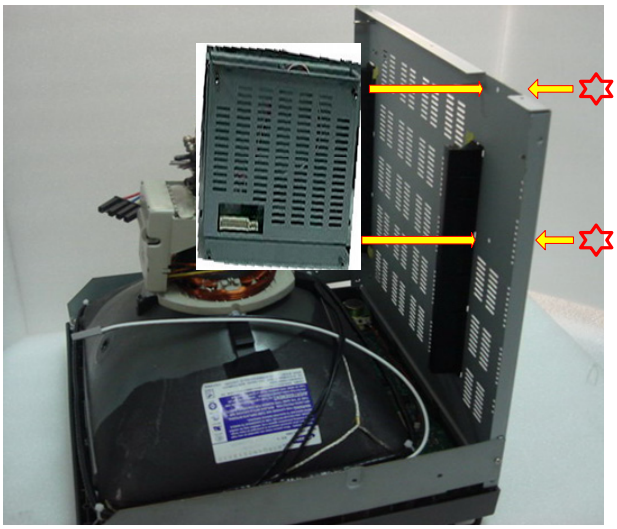
X 4 : PH M3x6

X 3 : PH ø3x6

2-2-4. B Board and SDI Board Bracket Reassembly

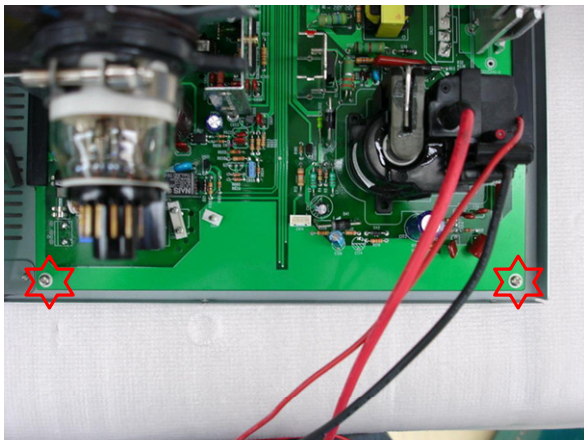


X 4 : PH M3x6



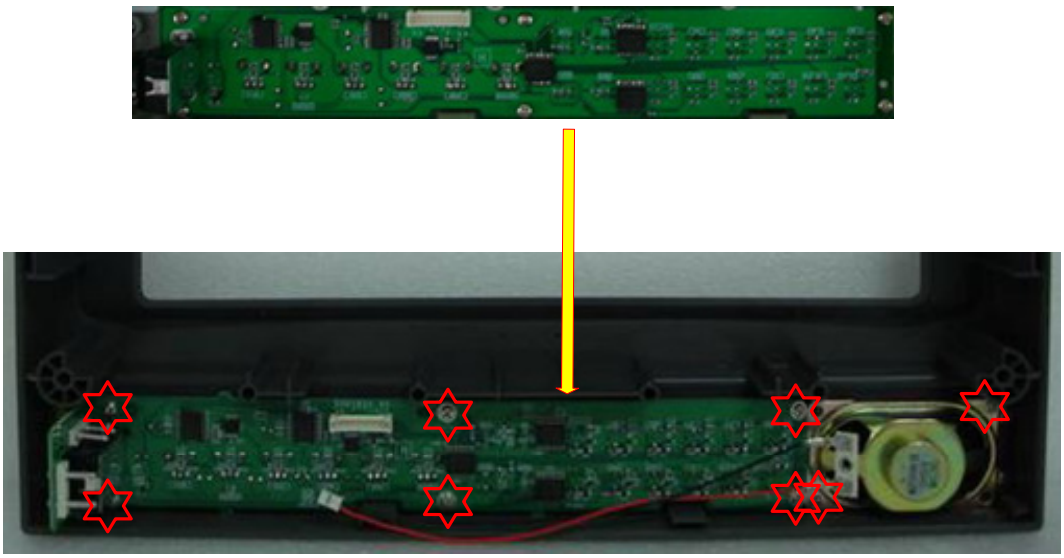
X 2 : PH M3x6

2-2-5. MAIN (A) Board Reassembly



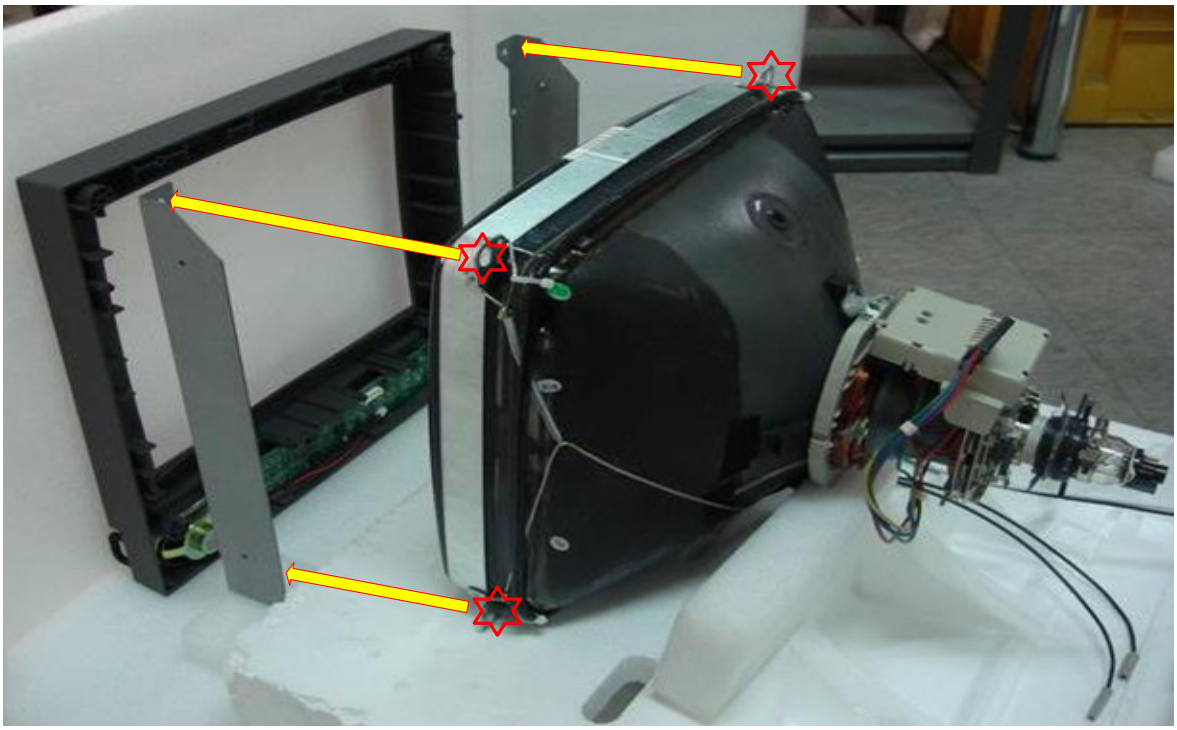
X 2 : NPH M3x8 Zn

2-2-6. H (Key Pad) , X (Power Switch) Board Reassembly



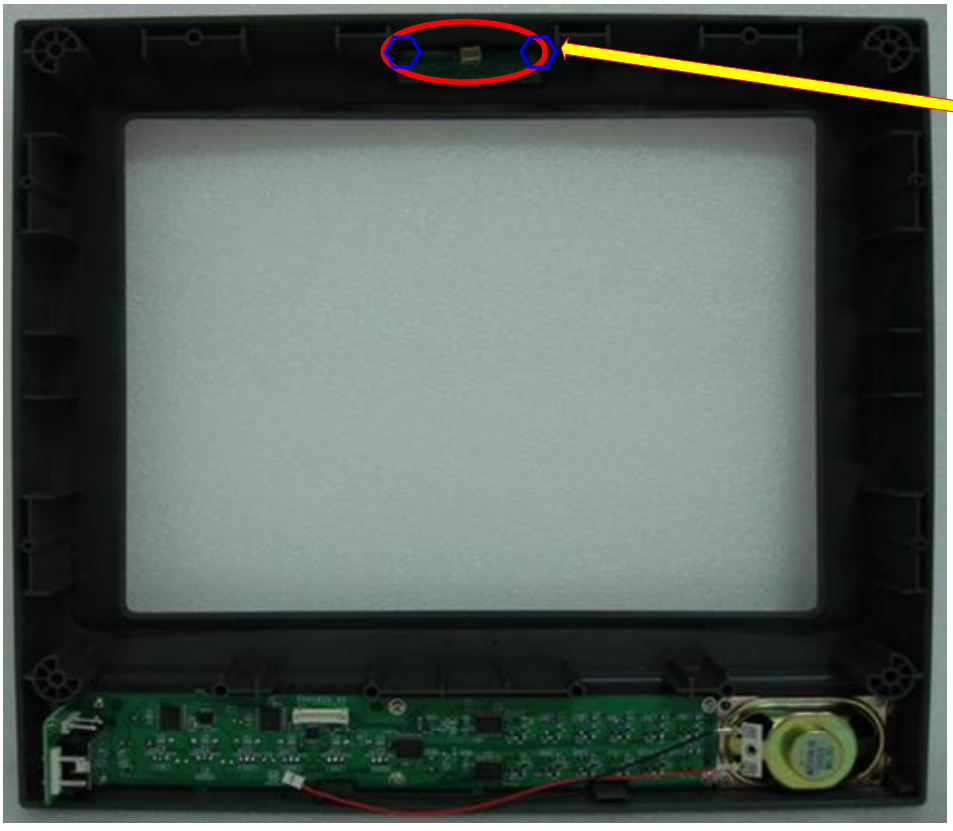
X 8 : NPH ø3x10

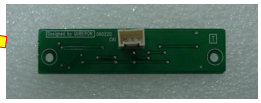
2-2-7. CRT Reassembly



X 4 : TH T1 ø5x25 Zn

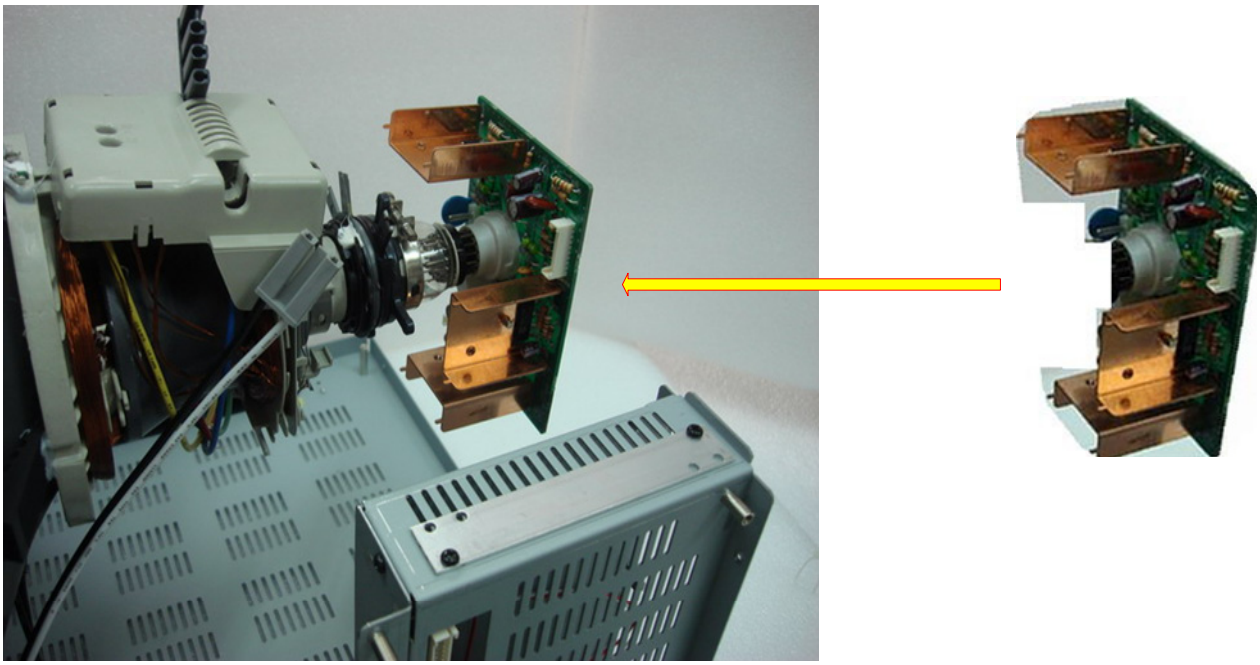
2-2-8. TALLY Board Reassembly



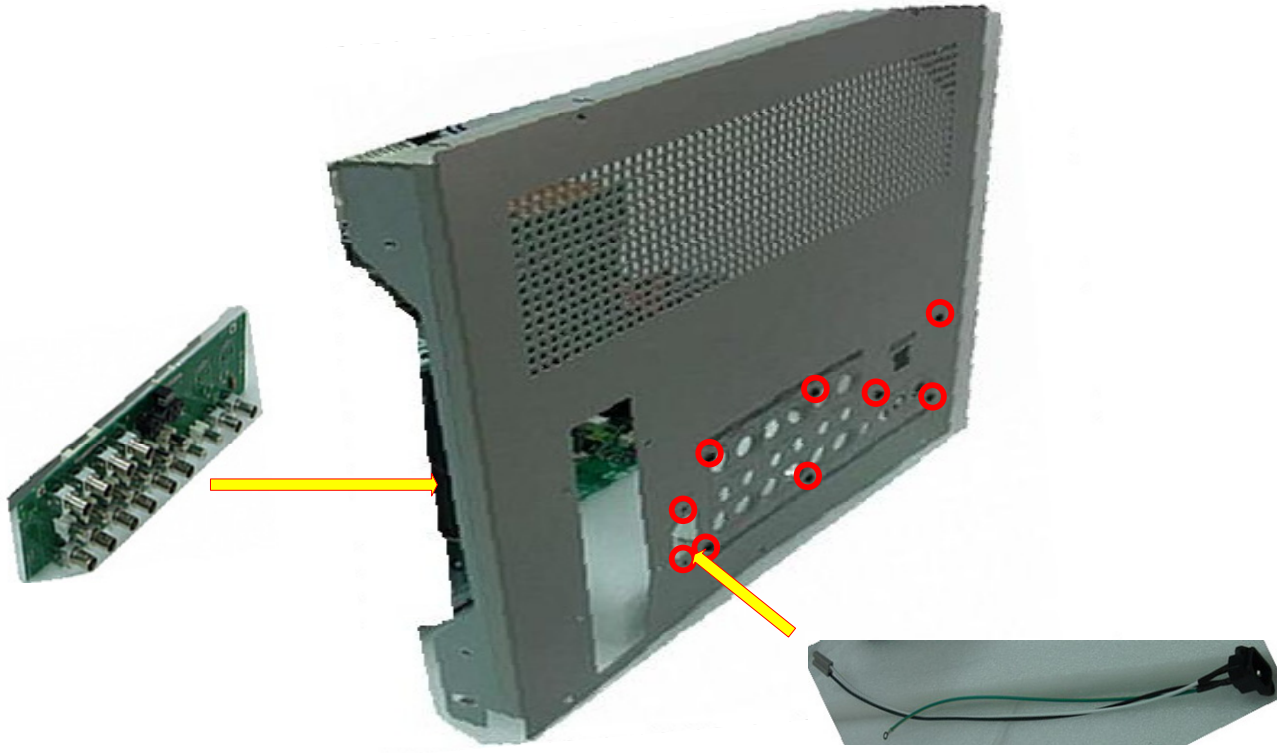


X 2 : PHNI ø2.6x5 Zn

2-2-9. CRT Board Reassembly



2-2-10. Q Board and AC INLET Reassembly



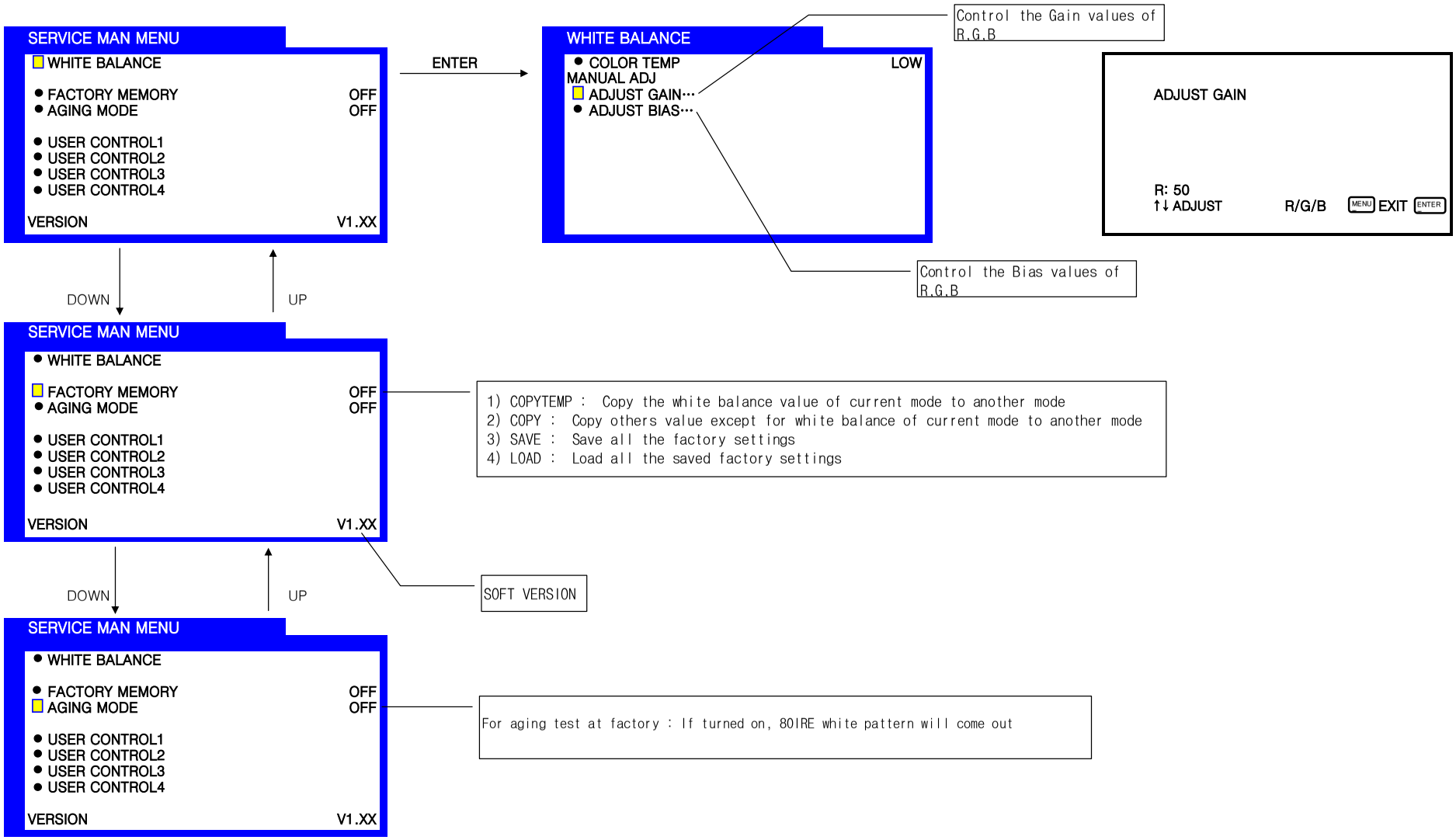
O X 10 : PH M3x6

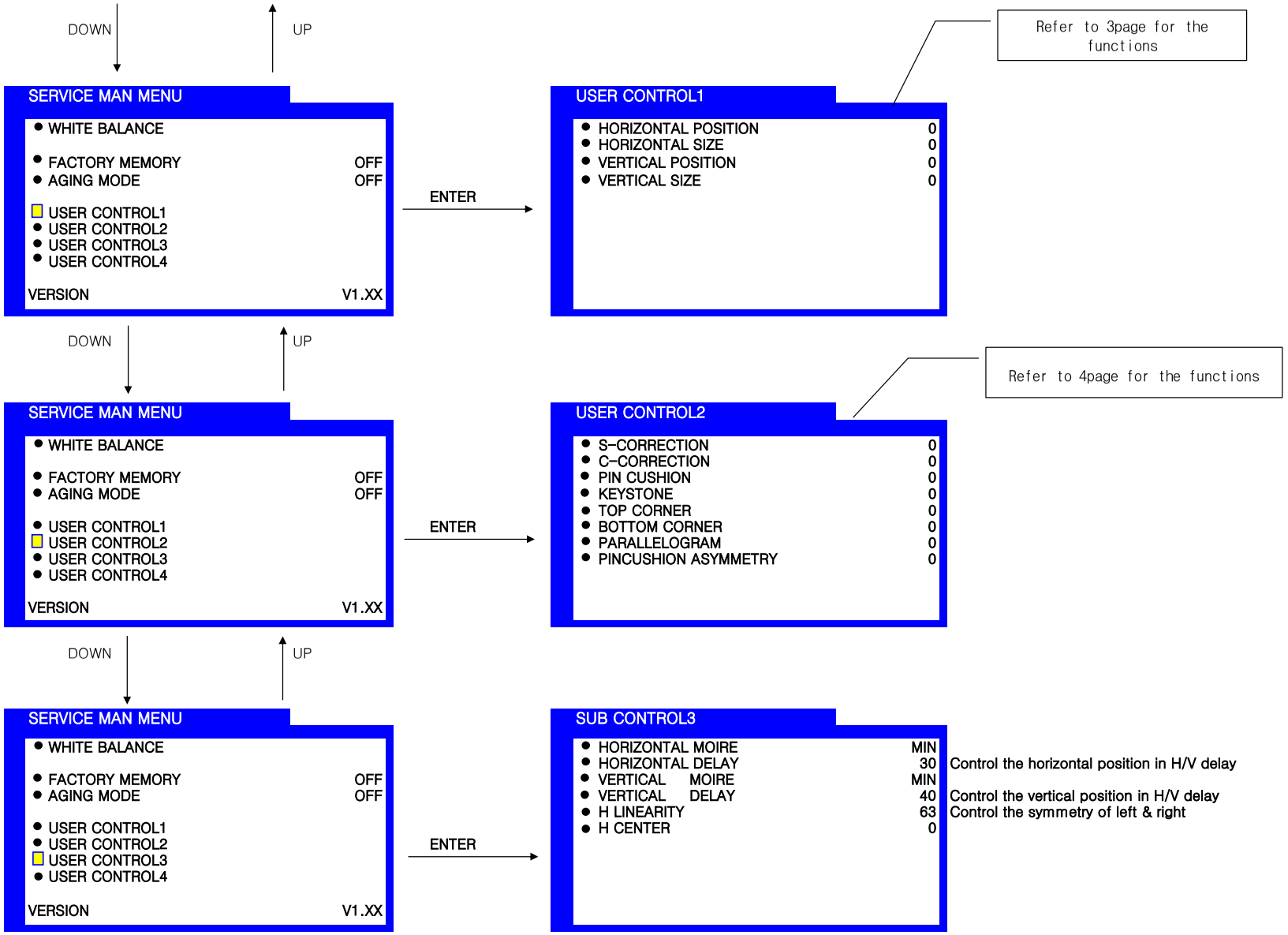
3. SERVICE MAN MENU Ability Explanation

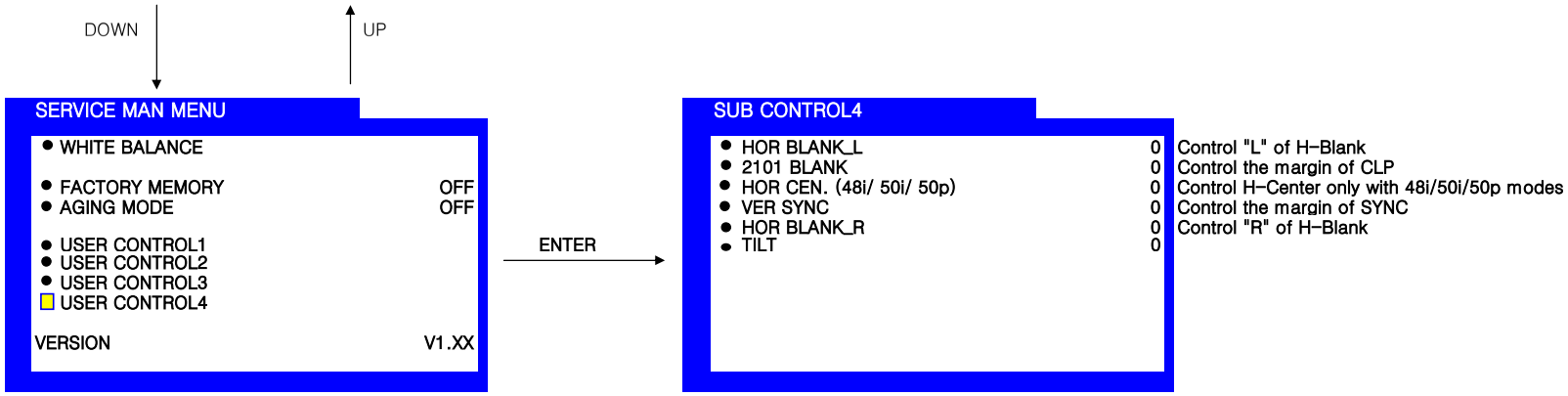
3.1 How to get to the service menu

: Push and hold the down button at front side, then push the marker button

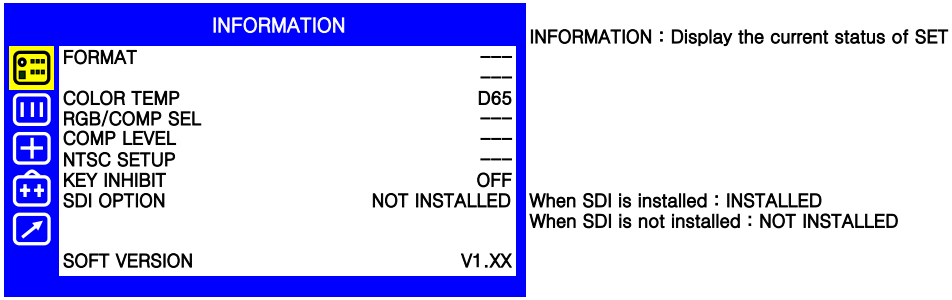
3.2 Functions

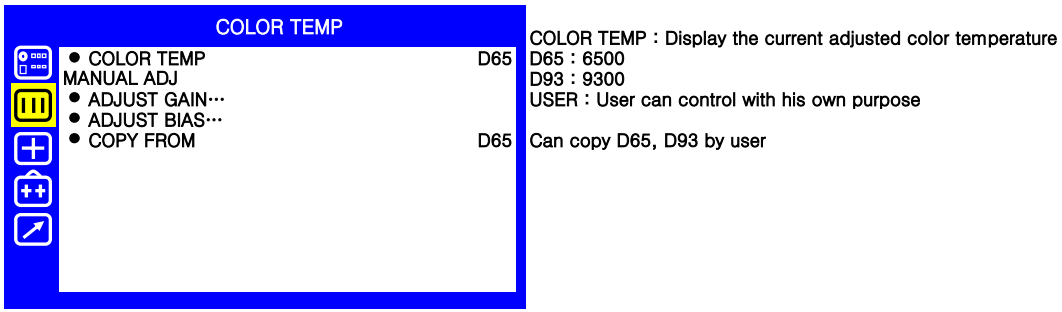


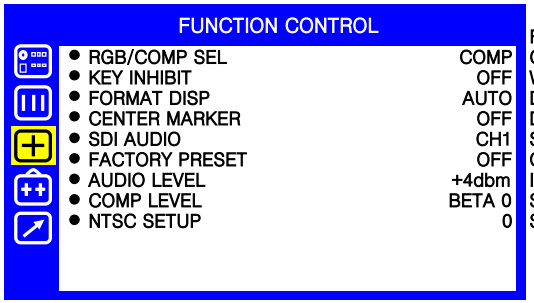

DOWN
UP
SERVICE MAN MENU
WHITE BALANCE
FACTORY MEMORY OFF
AGING MODE OFF
USER CONTROL1
USER CONTROL2
USER CONTROL3
USER CONTROL4
VERSION V1.XX
ENTER
USER CONTROL1
HORIZONTAL POSITION 0
HORIZONTAL SIZE 0
VERTICAL POSITION 0
VERTICAL SIZE 0
Refer to 3page for the functions
DOWN
UP
SERVICE MAN MENU
WHITE BALANCE
FACTORY MEMORY OFF
AGING MODE OFF
USER CONTROL1
USER CONTROL2
USER CONTROL3
USER CONTROL4
VERSION V1.XX
ENTER
USER CONTROL2
S-CORRECTION 0
C-CORRECTION 0
PIN CUSHION 0
KEYSTONE 0
TOP CORNER 0
BOTTOM CORNER 0
PARALLELOGRAM 0
PINCUSHION ASYMMETRY 0
Refer to 4page for the functions
DOWN
UP
SERVICE MAN MENU
WHITE BALANCE
FACTORY MEMORY OFF
AGING MODE OFF
USER CONTROL1
USER CONTROL2
USER CONTROL3
USER CONTROL4
VERSION V1.XX
ENTER
SUB CONTROL3
HORIZONTAL MOIRE MIN
HORIZONTAL DELAY 30
VERTICAL MOIRE MIN
VERTICAL DELAY 40
H LINEARITY 63
H CENTER 0
Control the horizontal position in H/V delay
Control the vertical position in H/V delay
Control the symmetry of left & right



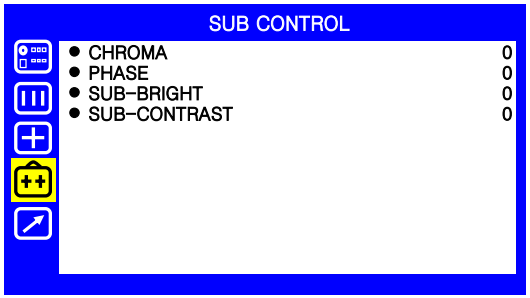
3.3 The explanation of functions on menu



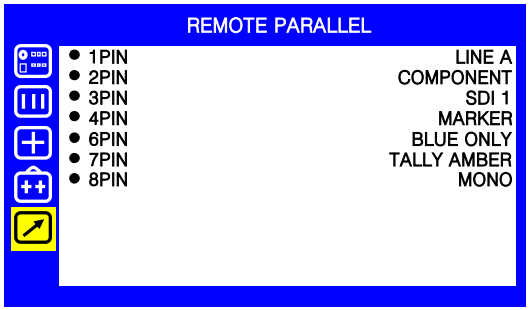




FUNCTION CONTROL : Menus that user can control yje setting values by his own purpose
Choose RGB or COMP
When turned on, it will stop the control switch, volume etc..at front side
Display the formatted status of set (ON, OFF, AUTO)
Display whether the center marker is used now or not
Select the SDI embedded audio channel
Get back the menu settings to factory settings
If the audio input signal is big –5dbm / small +4dbm
Select the component level (BETA0 / BETA7.5)
Select the NTSC pedestal level (0 / 7.5 IRE)



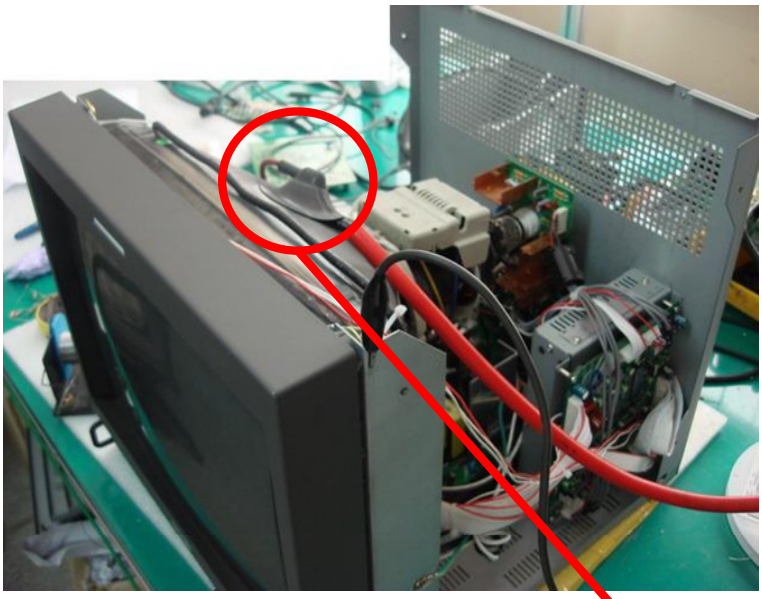
SUB CONTROL : Control color, brightness and contrast

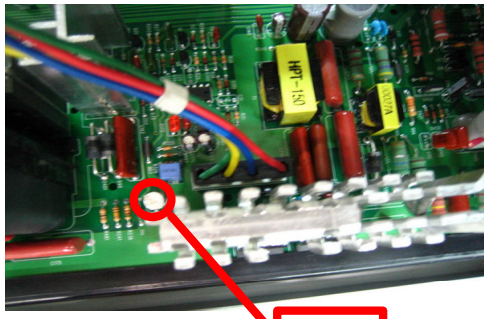


REMOTE PARALLEL : Set the pin functions of F wired remote controller

4. Drafting Adjustment

4-1. HIGH VOLTAGE Adjustment

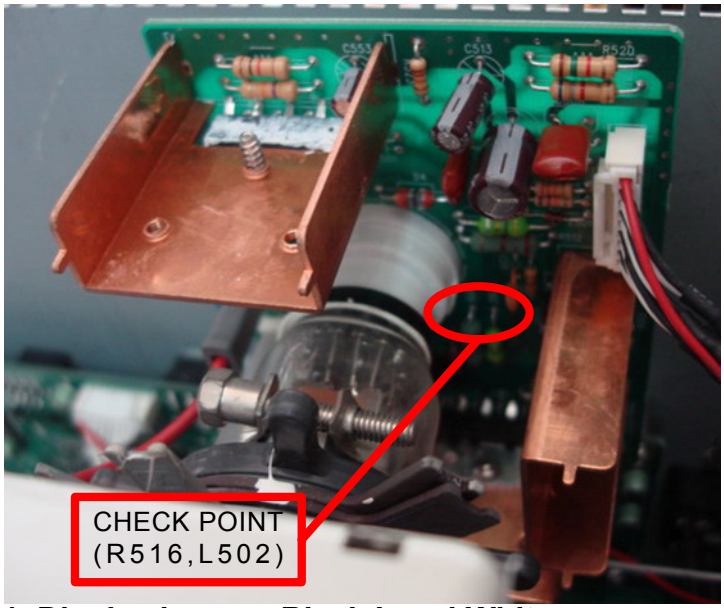


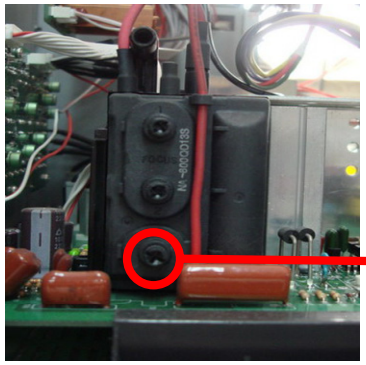


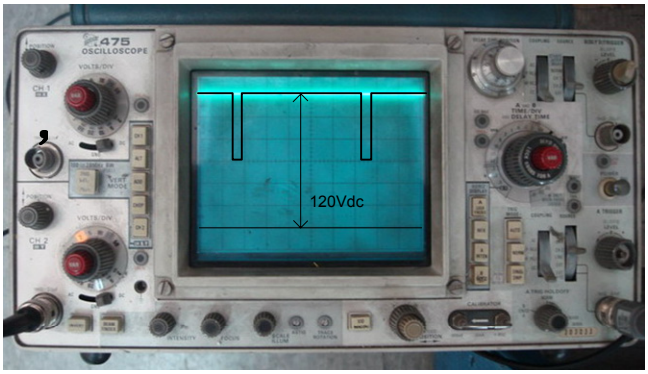
1. Display image : don t care
2. Contrast : center
3. Brightness : center
4. Limit : 25.0kV ± 0.2kV

Measure the high voltage level at the anode cap.
High voltage should be within the limit as above(RV1).

4-2. SCREEN Voltage Adjustment







< FIG1-1>

1. Display image : Black Level White
2. Contrast : center
3. Brightness : center
4. Limit : 120 ± 5Vdc

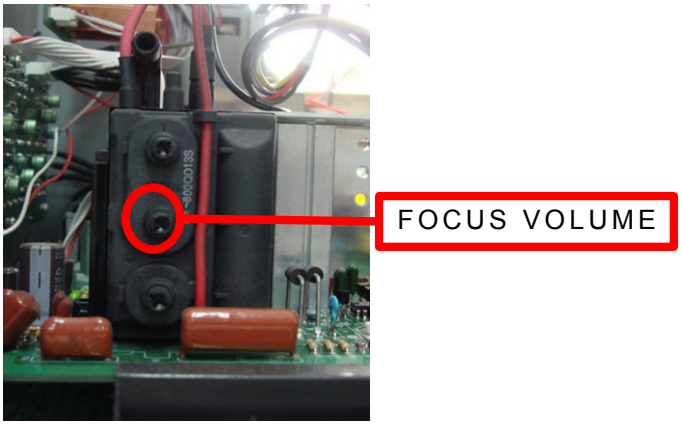
It measures Check point of the up picture with OSCILLOSCOPE. About under the variable with FIG1-1 waveform in order to hold FBT Screen VR together in Limit scope.

4-3. Focus Adjustment

CONDITIONS
Display image: Character pattern
Brightness: Center
Contrast: Center

PROCEDURE

1. Adjust the Focus VR on the FBT to display the sharpest image possible.
2. Use Locktite to seal the Focus VR in position.



4-4. Display Control Adjustments

4-4-1 HORIZONTAL POSITION

CONDITIONS
Display image: Crosshatch pattern

User UP/DOWN key after selecting H-POSITION In left menu to center the horizontal image on the raster.

4-4-2 HORIZONTAL SIZE

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting HORIZONTAL SIZE in the left Menu to adjust the horizontal size of the display

4-4-3 VERTICAL POSITION

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting V-POSITION in left menu to center the vertical image on the raster

4-4-4 VERTICAL SIZE

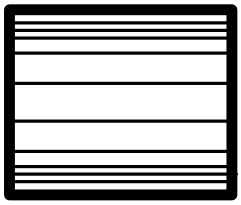
CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting V-SIZE in left menu to adjust the vertical size of the display

4-4-5 S-CORRECTION

CONDITIONS
Display image: Crosshatch pattern
Use UP/DOWN key after selecting S-CORRECTION in left menu to make the image area rectangular.

< Effect on Screen >

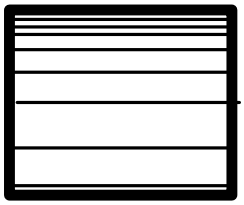


4-4-6 C-CORRECTION

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting C-CORRECTION in left menu to make the image area rectangular.

< Effect on Screen >

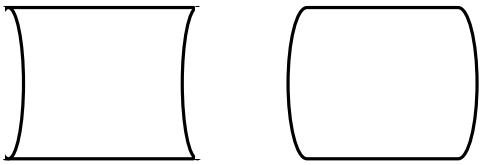


4-4-7 PIN CUSHION

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting PIN CUSHION in left menu to make the image area rectangular.

< Effect on Screen >

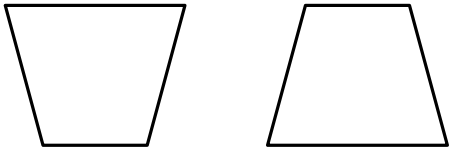


4-4-8 KEYSTONE

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting KEYSTONE in left menu to make the image area rectangular.

< Effect on Screen >

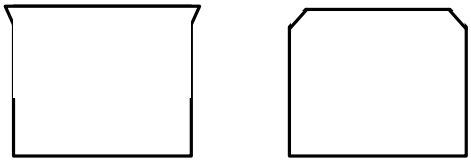


4-4-9 TOP CORNER

CONDITIONS
Display image: Crosshatch pattern

Use UP/DOWN key after selecting TOP CORNER in left menu to make the image area rectangular.

< Effect on Screen >

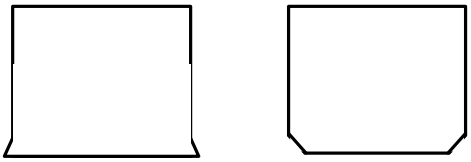


4-4-10 BOTTOM CORNER

CONDITIONS
Display image: **Crosshatch pattern**

Use UP/DOWN key after selecting BOTTOM CORNER in left menu to make the image area rectangular.

< Effect on Screen >

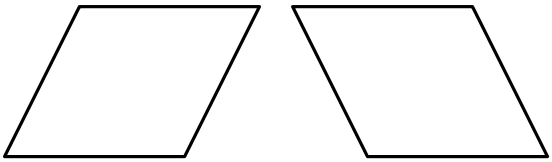


4-4-11 PARALLELOGRAM

CONDITIONS
Display image: **Crosshatch pattern**

Use UP/DOWN key after selecting PARALLELOGRAM In left menu to make the image area rectangular.

< Effect on Screen >

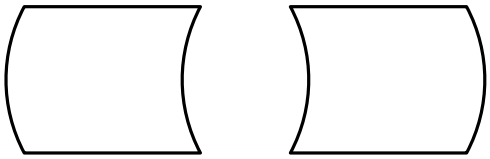


4-4-12 PINCUSHION ASYMMETRY

CONDITIONS
Display image: **Crosshatch pattern**

in left menu to make the image area rectangular.

< Effect on Screen >

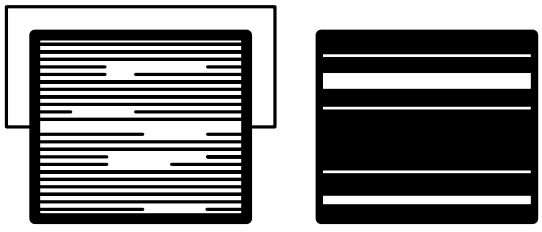


4-4-13 VERTICAL MOIRE

CONDITIONS
Display image: **Crosshatch pattern**

Use UP/DOWN key after selecting VERTICAL MOIRE in left menu to make the image area rectangular.

< Effect on Screen >

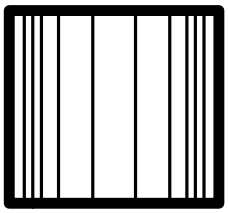


4-4-14 H LINEARITY

CONDITIONS
Display image: **Crosshatch pattern**

Use UP/DOWN key after selecting H LINEARITY in left menu to make the image area rectangular.

< Effect on Screen >



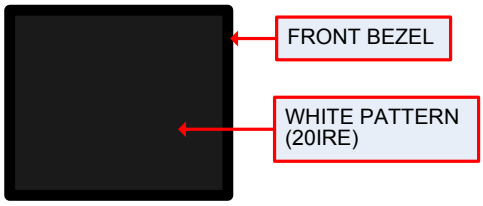
4-3. WHITE BALANCE Adjustment

PROCEDURE
Use the directions the color coordinates for:
6500K to x = 0.313 ± 0.02, y = 0.329 ± 0.02
9300K to x = 0.283 ± 0.02, y = 0.298 ± 0.02

CONDITIONS
Display image: **White pattern(20IRE)**
Brightness: **Center**
Contrast: **Center**

1. **It selects SERVICE MAN MENU WHITE BALANCE.**
2. **It selects COLOR TEMP LOW(6500K).**
3. **It selects Adjust Bias.**
4. **Adjust the luminance of the back raster to between " 3.5 to 4.0 cd/ using control bar after selecting G Bias in the menu.**
5. **Use control bar after selecting B Bias in left menu to 0.329 ± 0.02.**
6. **Use control bar after selecting R Bias in left menu to 0.313 ± 0.02.**

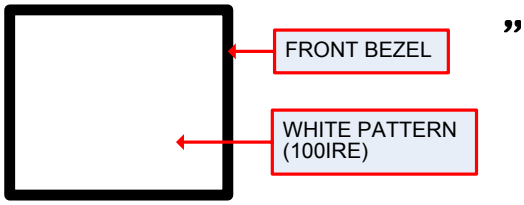
*** If color values can not be matched to desirable values, repeat sequences 3 and 4 after readjusting G Bias control.**



CONDITIONS
Display image: **White pattern(100IRE)**
Brightness: **Center**
Contrast: **Center**

1. **Adjust Gain .**
2. **Use control bar after selecting R Gain , G Gain and B Gain to adjust the luminance to 130 ± 3cd/ with the color coordinates ranged for 6500K to x = 0.329 ± 0.02, y = 0.313 ± 0.02.**

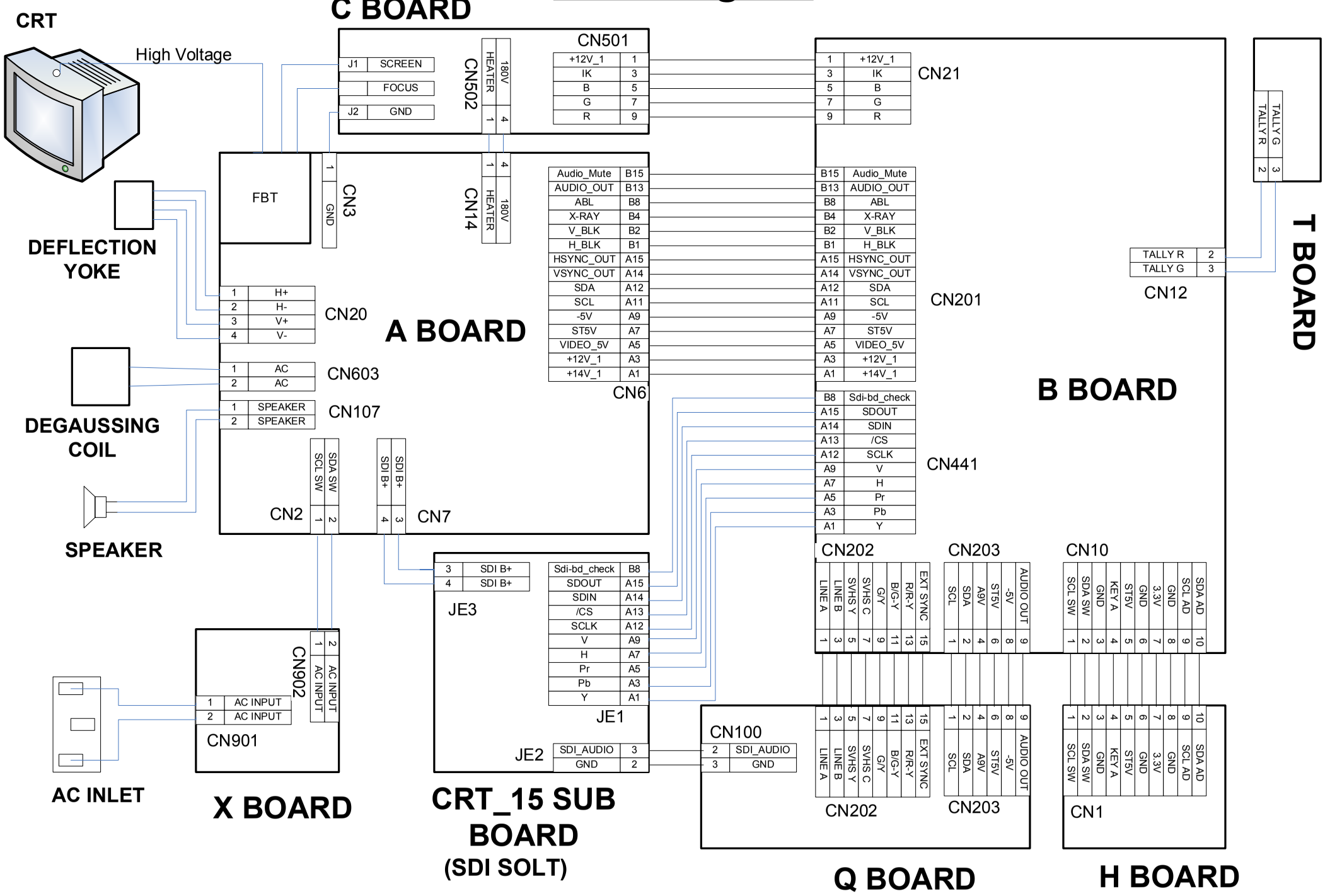
" **"**



5. Block Diagram

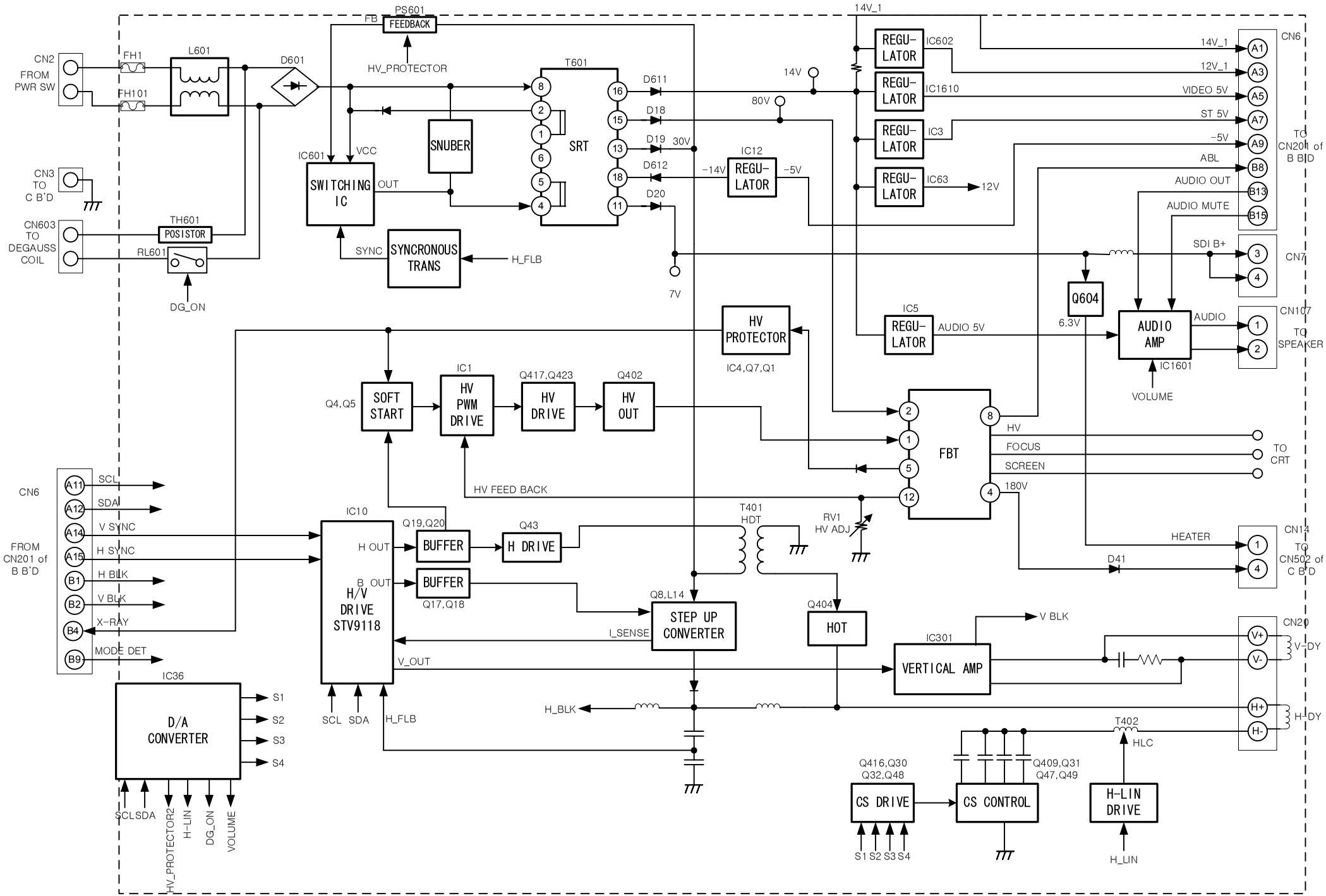
5-1 Wire Diagram

CONFIDENTIAL



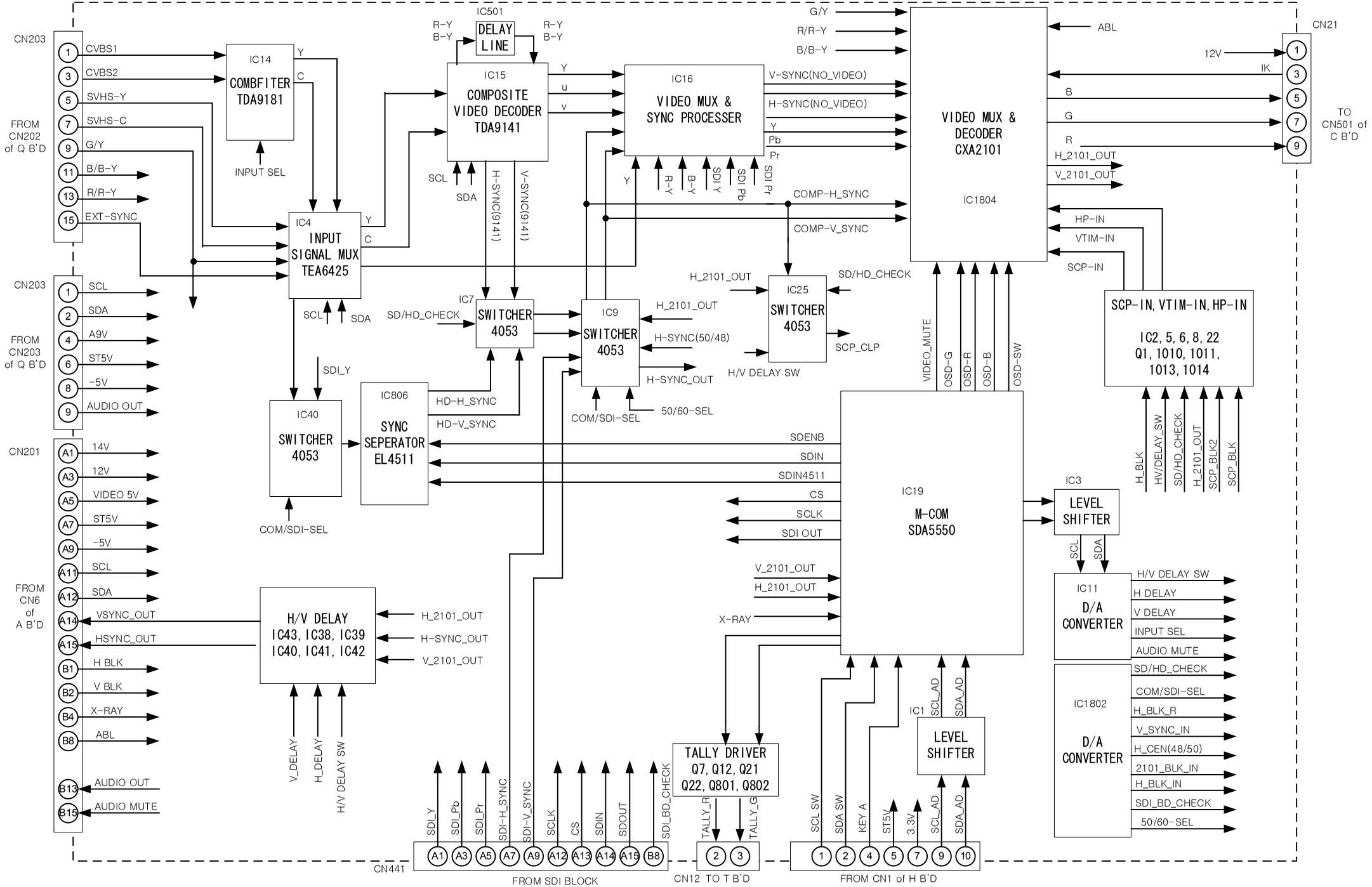
5-2 A-Board Block Diagram

CONFIDENTIAL



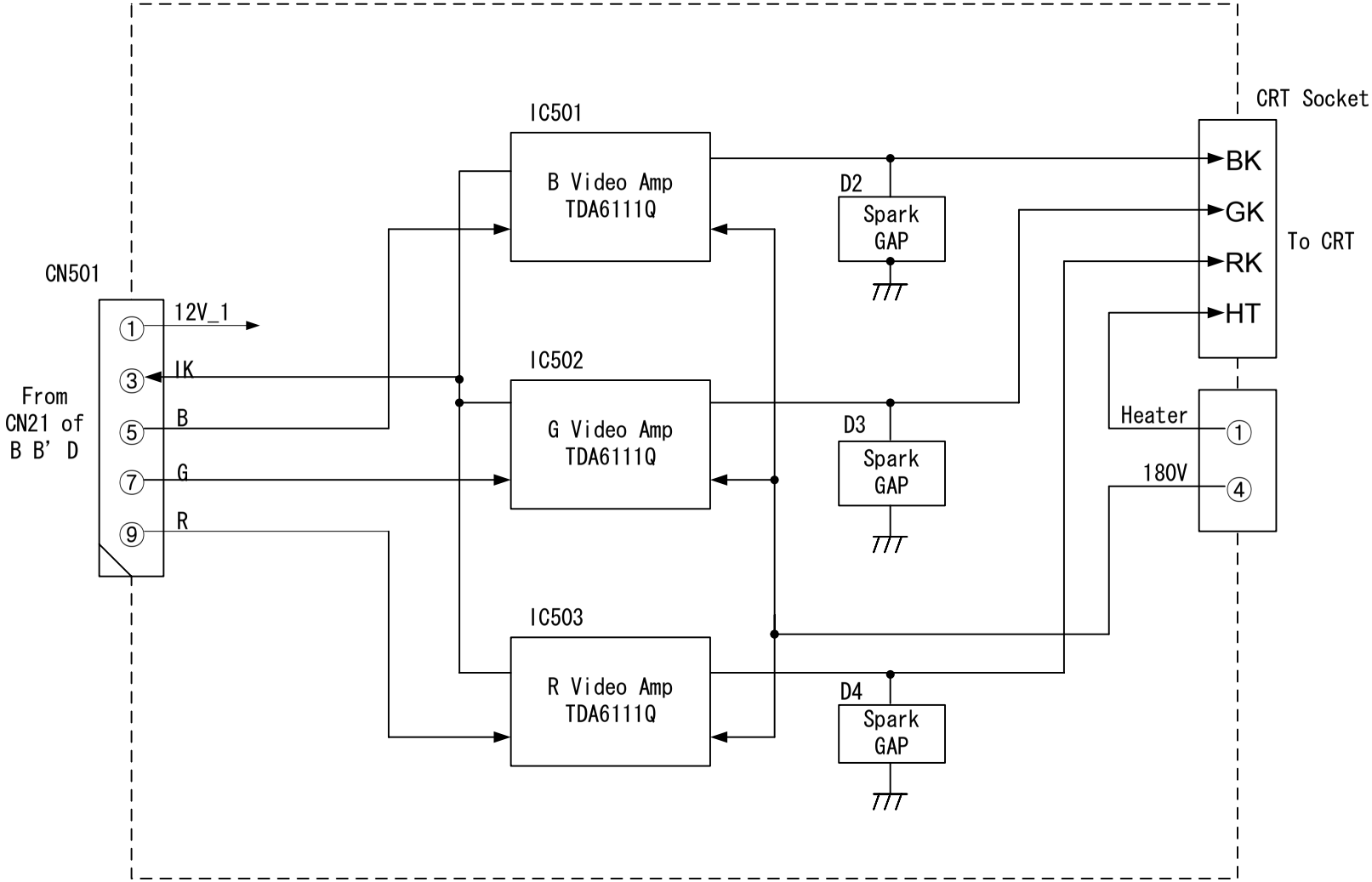
5-3 B-Board Block Diagram

CONFIDENTIAL



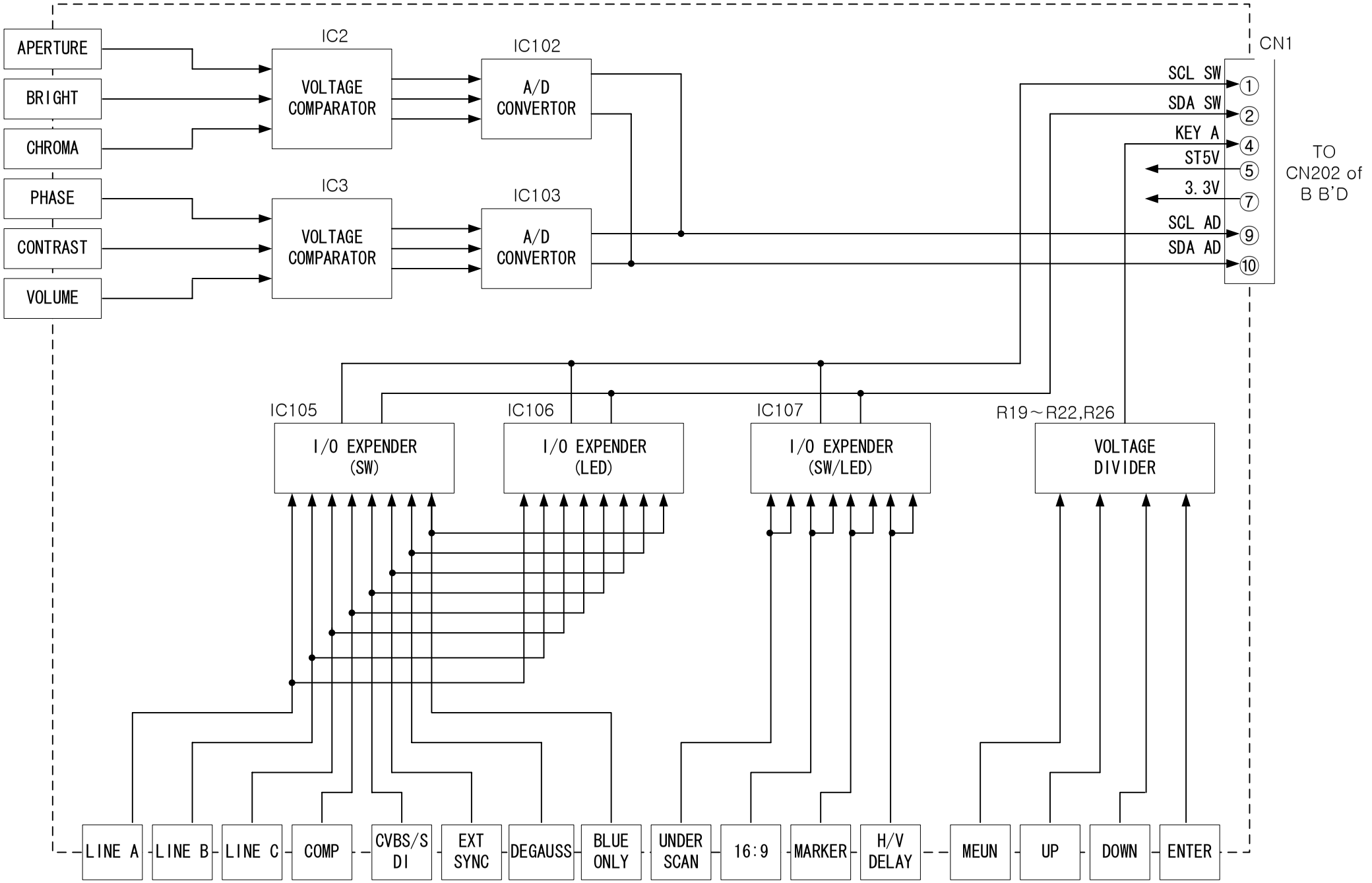
CONFIDENTIAL

5-4 C-Board Block Diagram



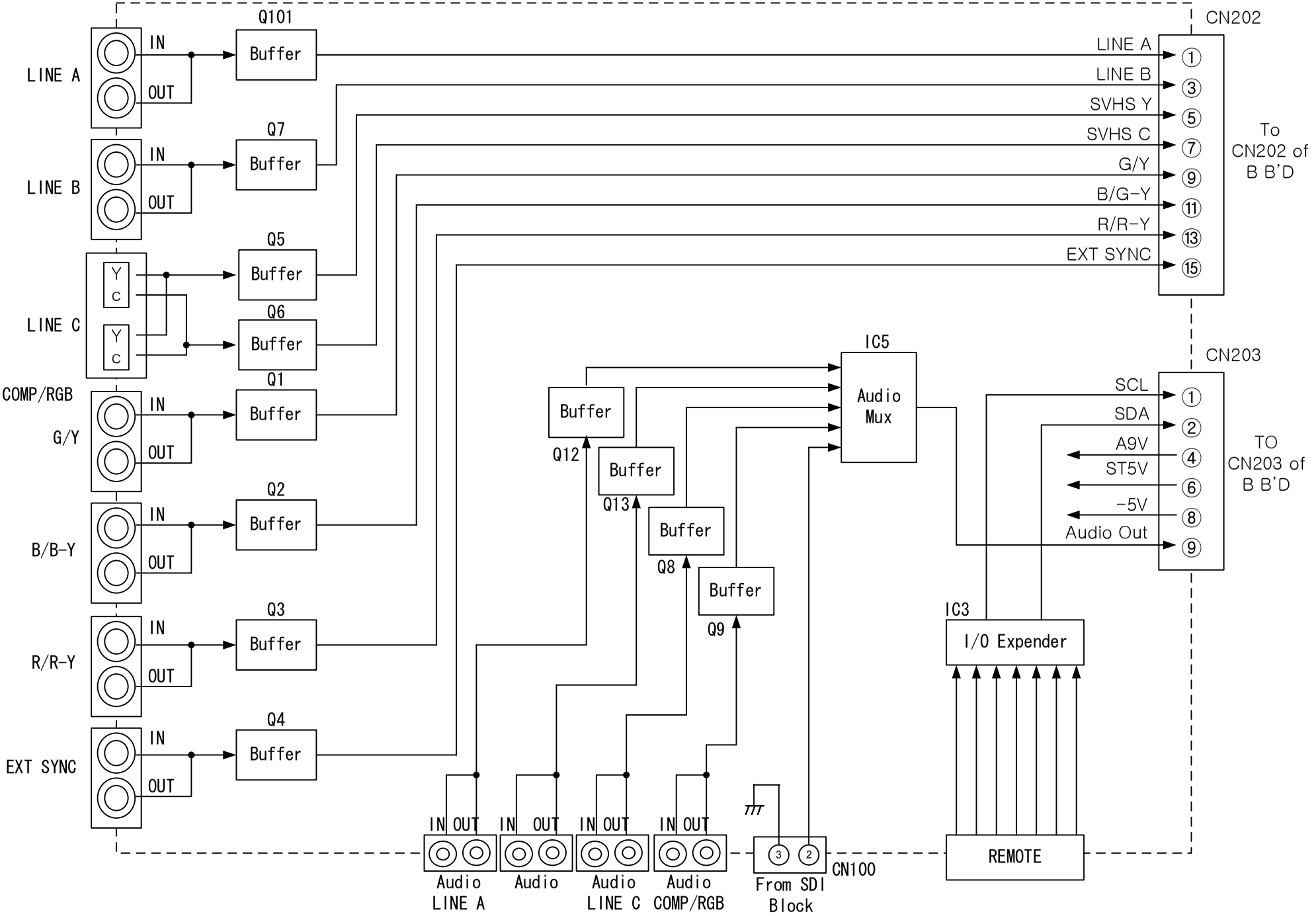
5-5 H-Board Block Diagram

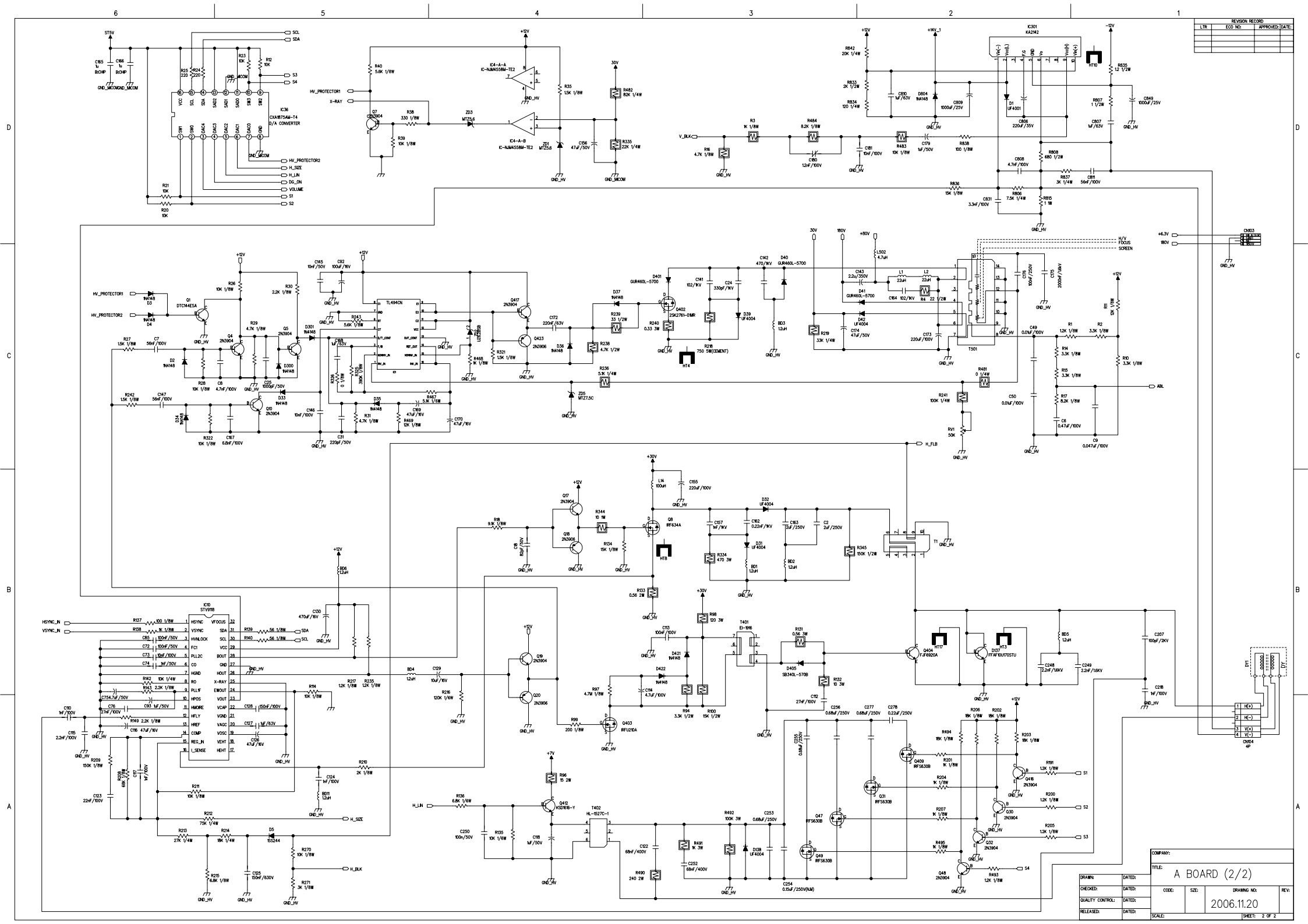
CONFIDENTIAL



5-6 Q-Board Block Diagram

CONFIDENTIAL

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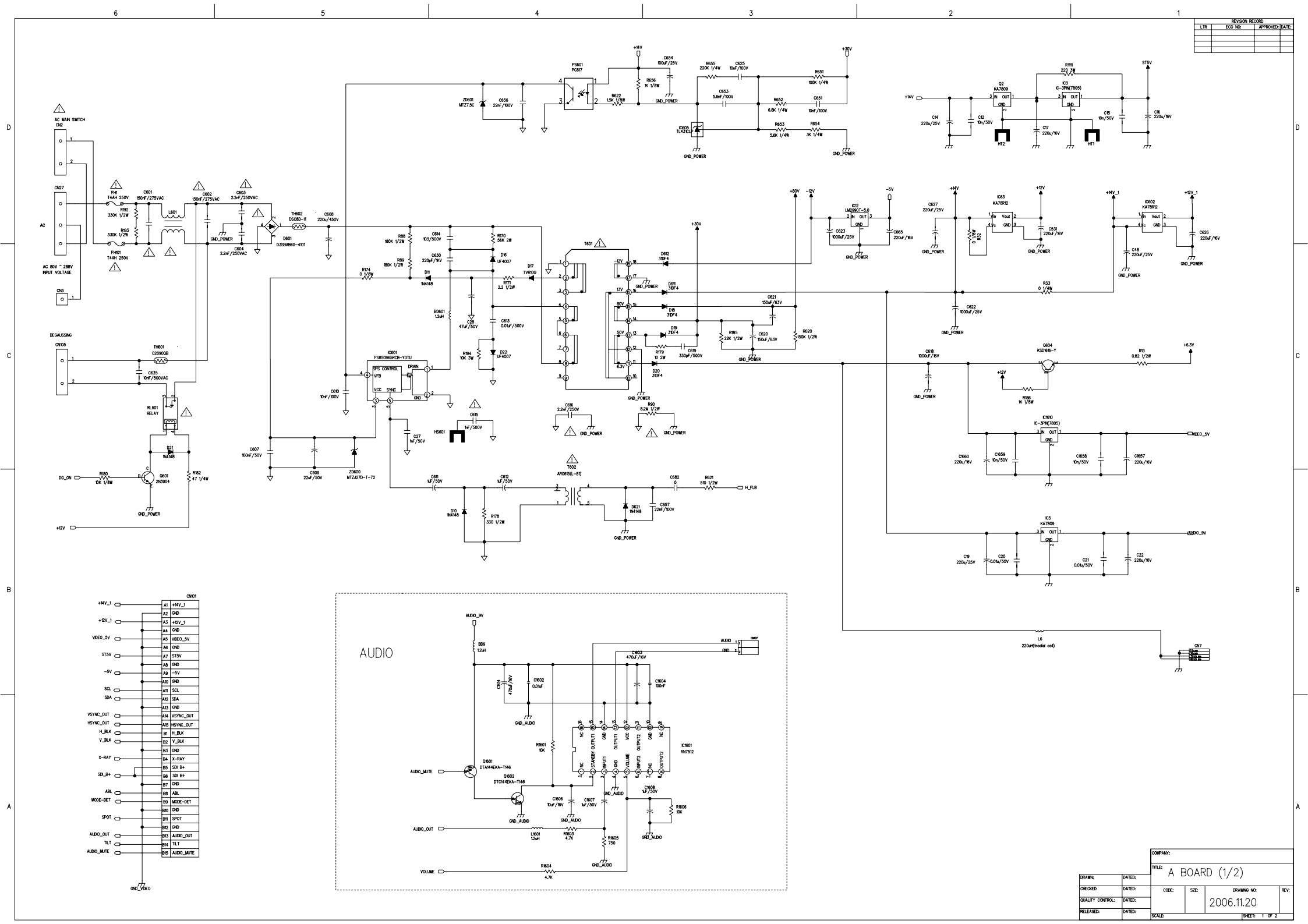
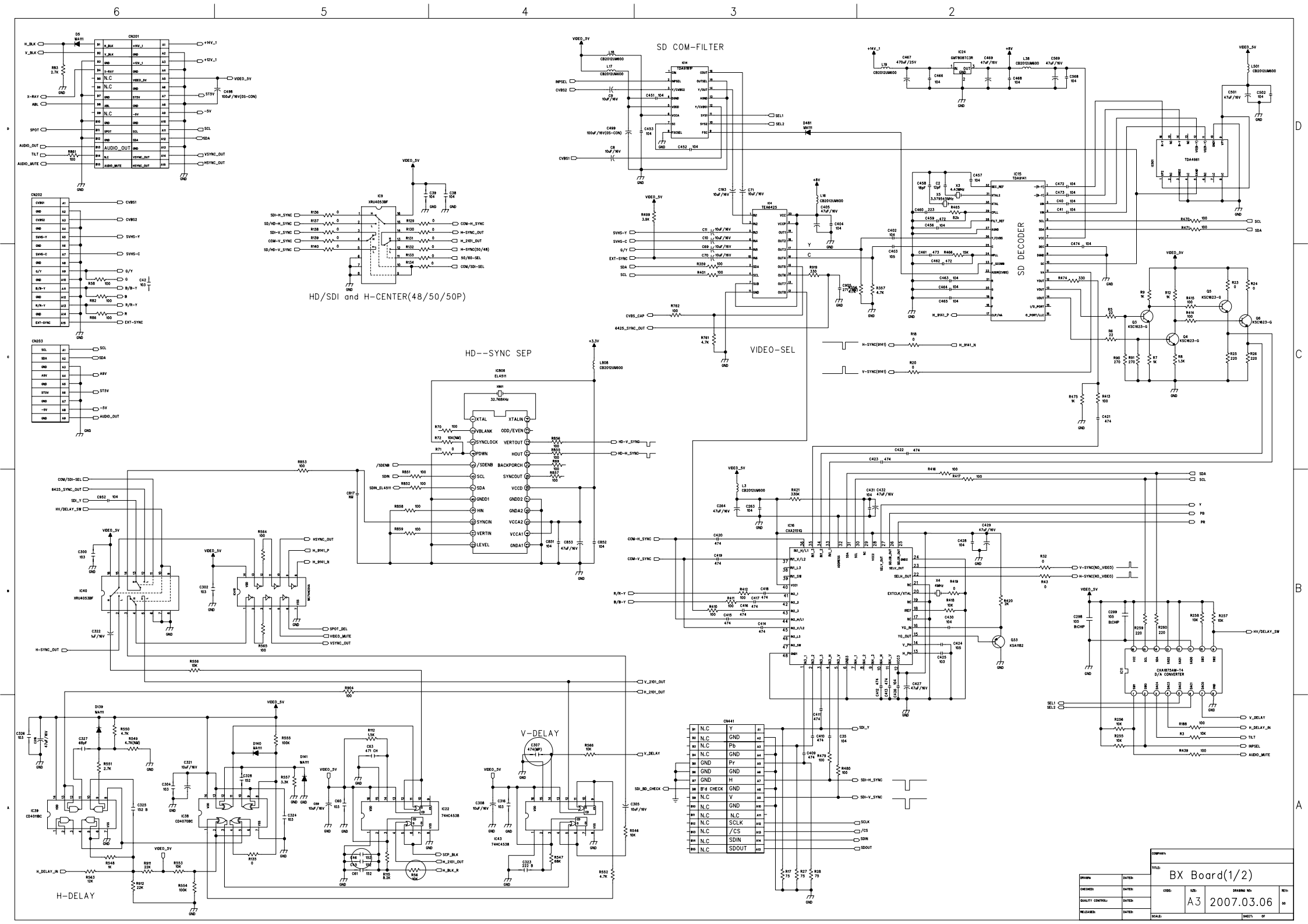
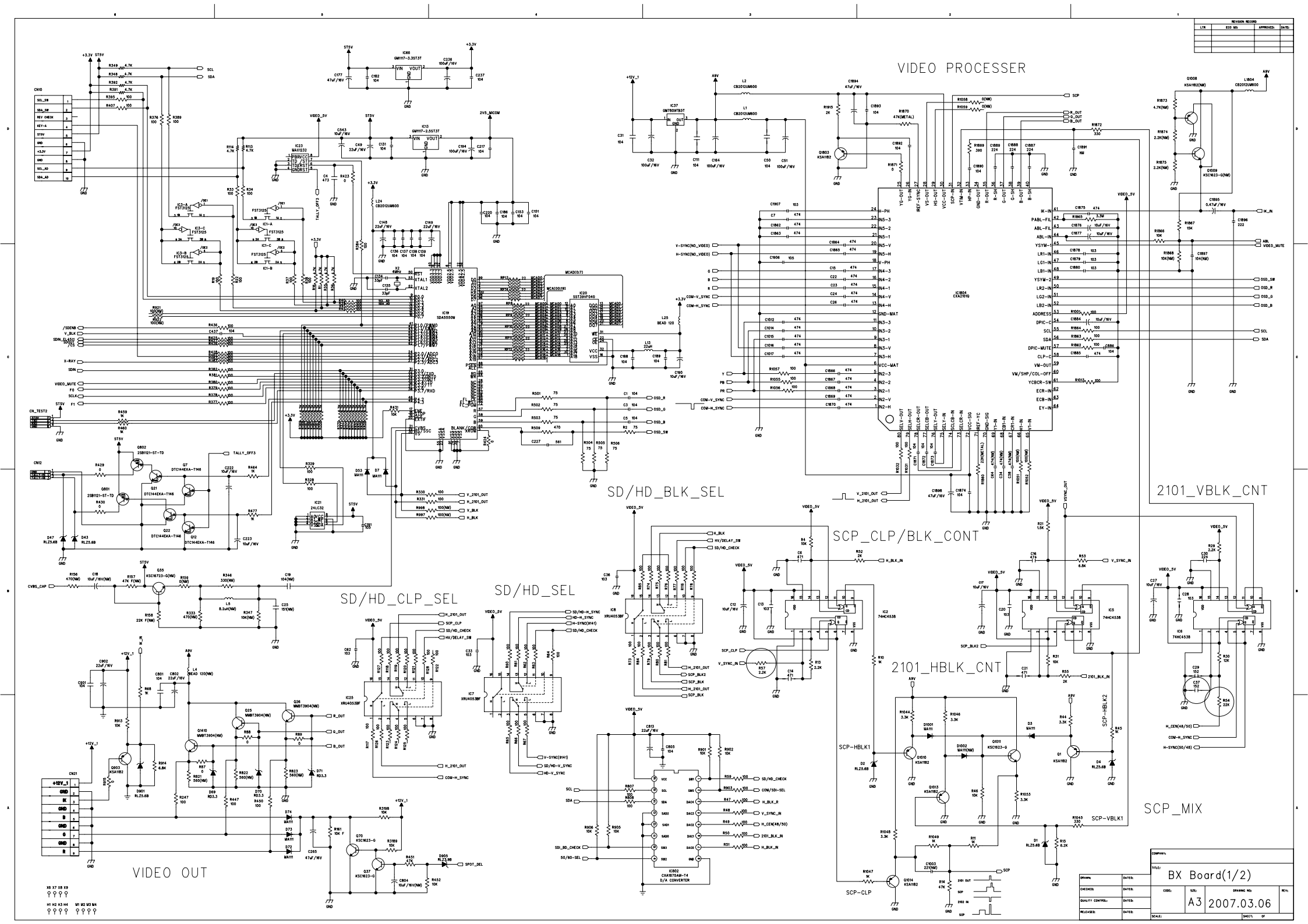
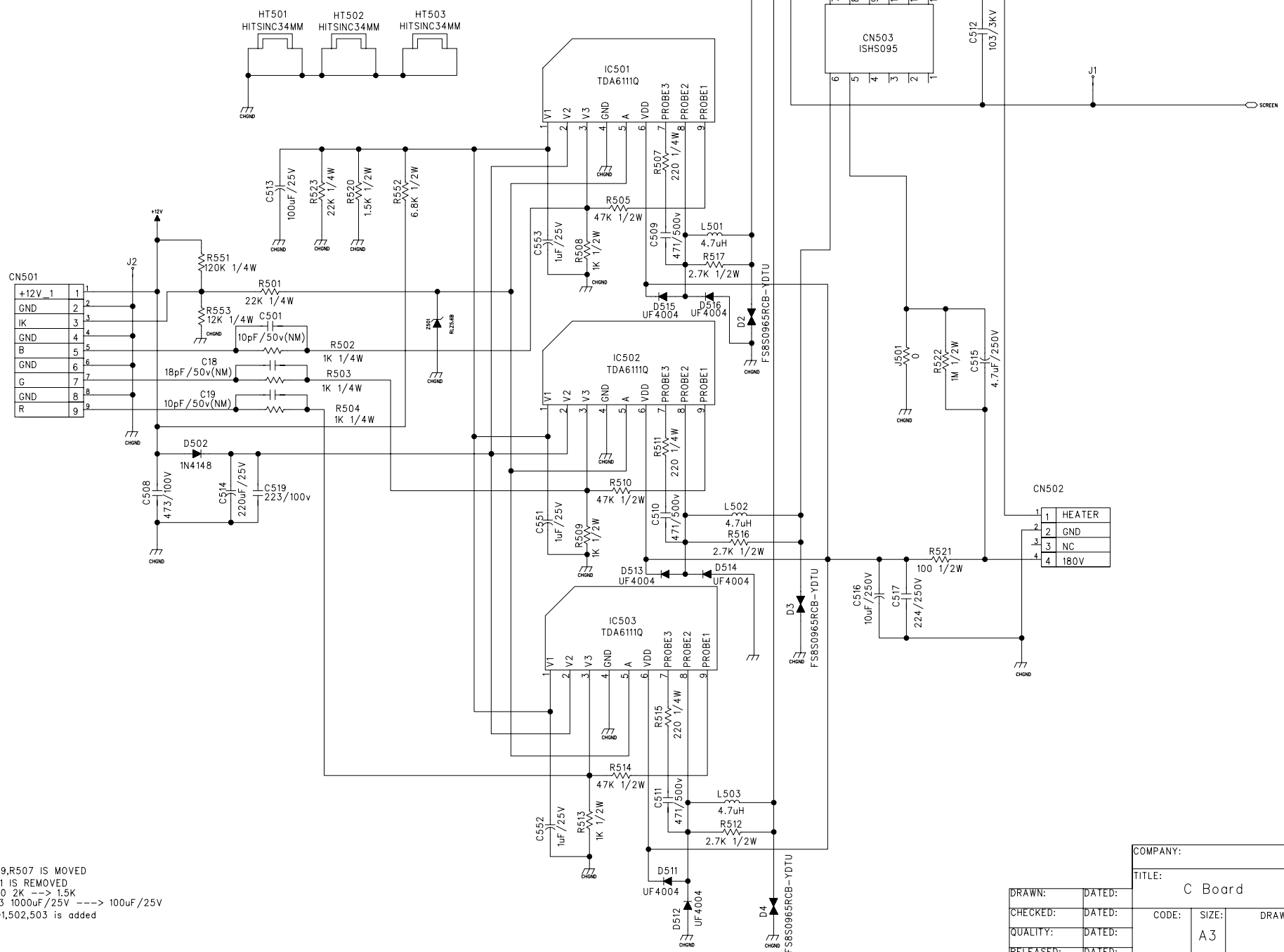
ECO NO:
APPROVED:
DATE:
IC36
CXA1875AM-T4
D/A CONVERTER
IC4-A-A
IC-NJM4558M-TE2
IC4-A-B
IC-NJM4558M-TE2
IC301
KA2142
TL494CN
IC10
STV9118
T401
EI-1916
T402
HL-1527C-1
T501
T1
CN103
CN104
4P
HV_PROTECTOR1
HV_PROTECTOR2
X-RAY
H_SIZE
H_LIN
H_FLB
H_BLK
V_BLK
ABL
H/V
FOCUS
SCREEN
HSYNC_IN
VSYNC_IN
GND_HV
GND_MICOM
COMPANY:
TITLE:
A BOARD (2/2)
DRAWN:
DATED:
CHECKED:
DATED:
QUALITY CONTROL:
DATED:
RELEASED:
DATED:
CODE:
SIZE:
DRAWING NO:
2006.11.20
REV:
SCALE:
SHEET: 2 OF 2



REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
AC MAIN SWITCH
CN2
CN27
AC
AC 80V ~ 288V INPUT VOLTAGE
CN3
DEGAUSSING
CN105
FH1 T4AH 250V
FH101 T4AH 250V
C601 150nF/275VAC
C602 150nF/275VAC
C603 2.2nF/250VAC
C604 2.2nF/250VAC
L601
TH602 DSC8D-11
D601 D3SBA860-4101
C608 220u/450V
TH601 020900B
C635 10nF/500VAC
RL601 RELAY
D21 1N4148
Q601 2N3904
R180 10K 1/8W
R182 47 1/4W
DG_ON
+12V
GND_POWER
PS601 PC817
ZD601 MTZ7.5C
C656 22nF/100V
R622 1.5K 1/8W
R656 1K 1/8W
C654 100uF/25V
R655 220K 1/4W
C625 10nF/100V
R651 100K 1/4W
C653 5.6nF/100V
R652 6.8K 1/4W
C651 10nF/100V
IC605 TL431CLP
R653 5.6K 1/4W
R654 3K 1/4W
+14V
+30V
Q2 KA7809
IC3 IC-3PIN(7805)
R111 220 3W
ST5V
C14 220u/25V
C12 10n/50V
C17 220u/16V
C15 10n/50V
C16 220u/16V
HT2
HT1
R88 180K 1/2W
R89 180K 1/2W
C614 103/500V
C630 220pF/1KV
R170 56K 2W
D16 UF4007
D17 TVR10G
R174 0 1/8W
D11 1N4148
R171 2.2 1/2W
BD601 1.2uH
C28 47uF/50V
C613 0.01uF/500V
R194 10K 3W
D22 UF4007
IC601 FS8S0965RCB-YDTU
SPS CONTROL
VFB
VCC
SYNC
DRAIN
GND
C610 10nF/100V
C615 1nF/500V
HS601
C27 1nF/50V
C607 100nF/50V
C609 22uF/50V
ZD600 MTZJ27D-T-72
T601
D612 31DF4
D611 31DF4
D18 31DF4
D19 31DF4
D20 31DF4
R179 10 2W
C619 330pF/500V
C621 150uF/63V
R185 22K 1/2W
C620 150uF/63V
R620 150K 1/2W
C616 2.2nF/250V
R90 8.2M 1/2W
IC12 LM2990T-5.0
C623 1000uF/25V
C665 220uF/16V
IC63 KA78R12
C627 220uF/25V
R32 0 1/8W
C531 220uF/16V
IC602 KA78R12
C48 220uF/25V
C626 220uF/16V
R33 0 1/4W
C622 1000uF/25V
C618 1000uF/16V
Q604 KSD1616-Y
R13 0.82 1/2W
+6.3V
R186 1K 1/8W
IC1610 IC-3PIN(7805)
VIDEO_5V
C1660 220u/16V
C1659 10n/50V
C1658 10n/50V
C1657 220u/16V
IC5 KA7809
AUDIO_9V
C19 220u/25V
C20 0.01u/50V
C21 0.01u/50V
C22 220u/16V
L6 220uH(trodial coil)
CN7
T602 AR0615(L-81)
C611 1uF/50V
C612 1uF/50V
C682 0
R621 510 1/2W
H_FLB
D10 1N4148
R178 330 1/2W
D621 1N4148
C657 22nF/100V
CN101
+14V_1
+12V_1
VIDEO_5V
ST5V
-5V
SCL
SDA
VSYNC_OUT
HSYNC_OUT
H_BLK
V_BLK
X-RAY
SDI_B+
ABL
MODE-DET
SPOT
AUDIO_OUT
TILT
AUDIO_MUTE
GND_VIDEO
AUDIO
AUDIO_9V
BD9 1.2uH
C1603 470uF/16V
C1614 470uF/16V
C1602 0.01uF
C1604 100nF
IC1601 AN7512
R1601 10K
Q1601 DTA144EKA-T146
Q1602 DTC144EKA-T146
C1606 10uF/16V
C1607 1uF/50V
C1608 1uF/50V
R1606 10K
L1601 1.2uH
R1603 4.7K
R1605 750
R1604 4.7K
GND_AUDIO
COMPANY:
TITLE: A BOARD (1/2)
DRAWN:
DATED:
CHECKED:
QUALITY CONTROL:
RELEASED:
CODE:
SIZE:
DRAWING NO: 2006.11.20
REV:
SCALE:
SHEET: 1 OF 2


SD COM-FILTER
HD/SDI and H-CENTER(48/50/50P)
HD--SYNC SEP
VIDEO-SEL
SD DECODER
V-DELAY
H-DELAY
BX Board(1/2)
A3
2007.03.06

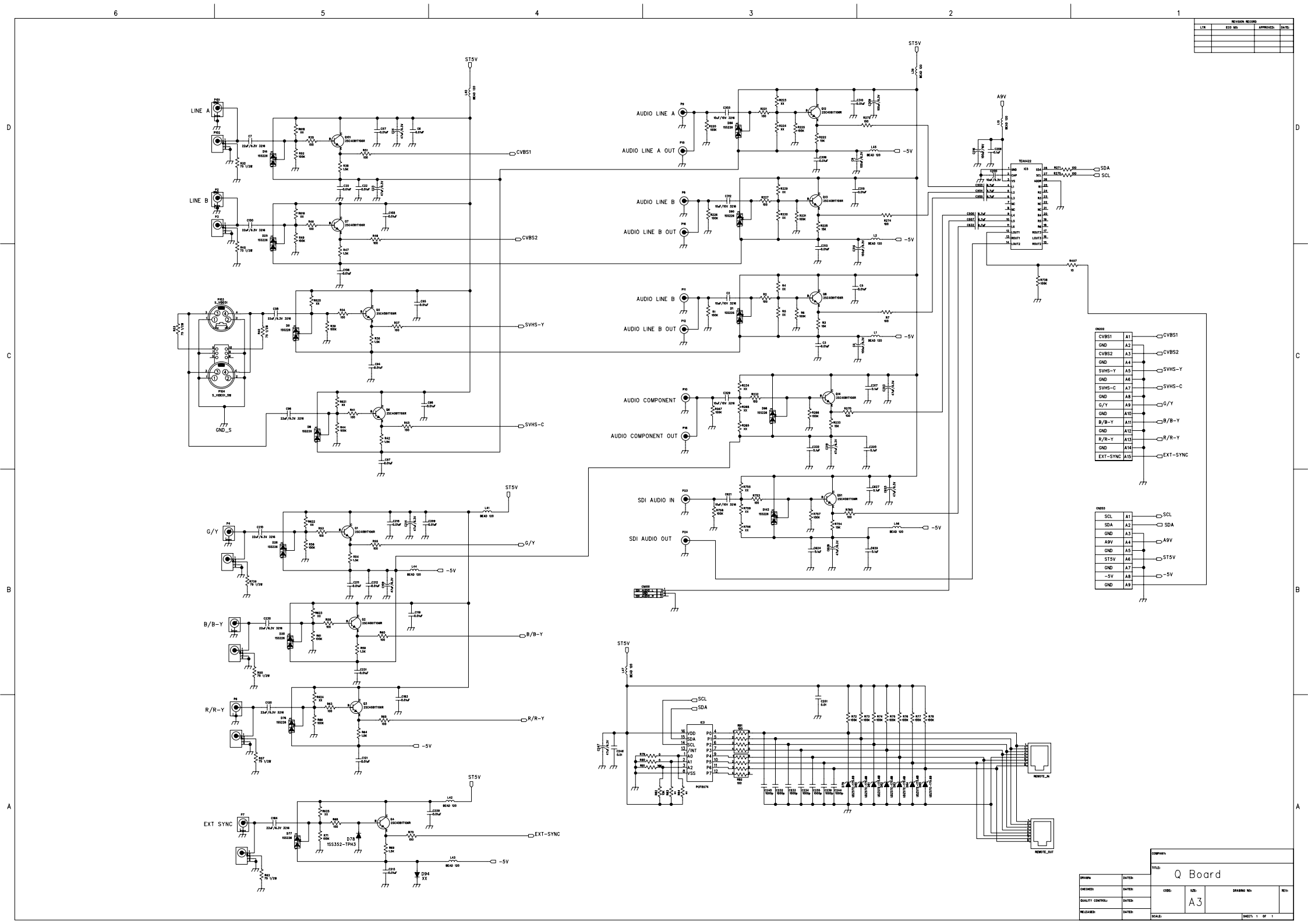

VIDEO PROCESSER
SD/HD_BLK_SEL
2101_VBLK_CNT
SCP_CLP/BLK_CONT
SD/HD_CLP_SEL
SD/HD_SEL
2101_HBLK_CNT
VIDEO OUT
SCP_MIX
BX Board(1/2)
A3
2007.03.06



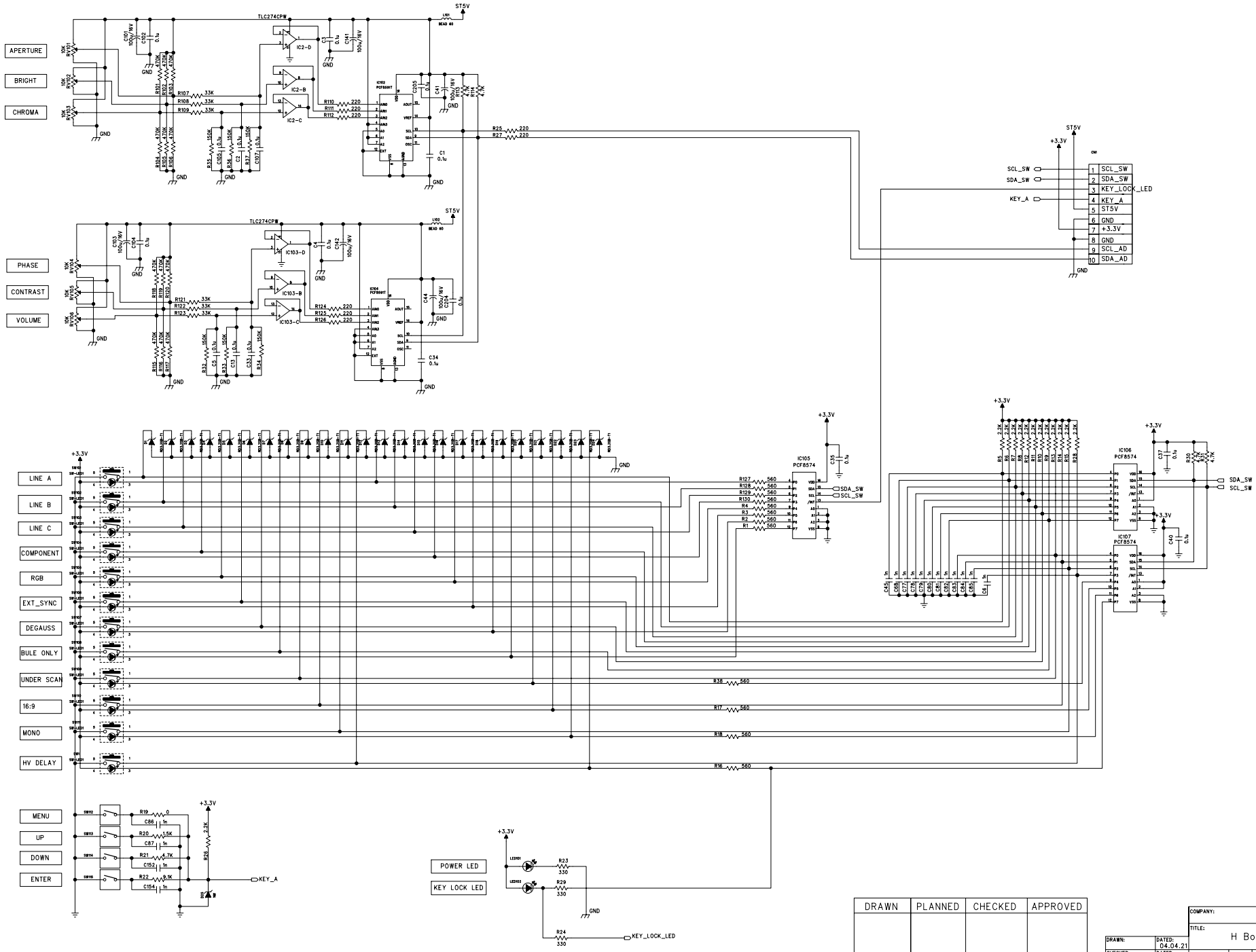
2005,7,29 : C509,R507 IS MOVED
2005,11,12 : D501 IS REMOVED
R520 2K --> 1.5K
C513 1000uF/25V ---> 100uF/25V
2005,12,16 : L501,502,503 is added

REVISION RECORD			
LTR	ECO NO:	APPROVED	DATE:

DRAWN:	DATED:	COMPANY:	
CHECKED:	DATED:	TITLE: C Board	
QUALITY:	DATED:	CODE:	SIZE: A3 / DRAWING NO: / REV: 00
RELEASED:	DATED:	SCALE:	SHEET: OF


REVISION RECORD
LTR
ECO NO:
APPROVED:
DATE:
LINE A
LINE B
CVBS1
CVBS2
SVHS-Y
SVHS-C
GND_S
AUDIO LINE A
AUDIO LINE A OUT
AUDIO LINE B
AUDIO LINE B OUT
AUDIO COMPONENT
AUDIO COMPONENT OUT
SDI AUDIO IN
SDI AUDIO OUT
G/Y
B/B-Y
R/R-Y
EXT SYNC
EXT-SYNC
ST5V
A9V
-5V
SDA
SCL
REMOTE_IN
REMOTE_OUT
CN202
CVBS1
GND
CVBS2
SVHS-Y
SVHS-C
G/Y
B/B-Y
R/R-Y
EXT-SYNC
CN203
SCL
SDA
A9V
ST5V
-5V
TEA6422
PCF8574
D78
1SS352-TPH3
D94
XX
COMPANY:
TITLE:
Q Board
DRAWN:
DATED:
CHECKED:
QUALITY CONTROL:
RELEASED:
CODE:
SIZE:
A3
DRAWING NO:
REV:
SCALE:
SHEET: 1 OF 1

DRAWING NO :



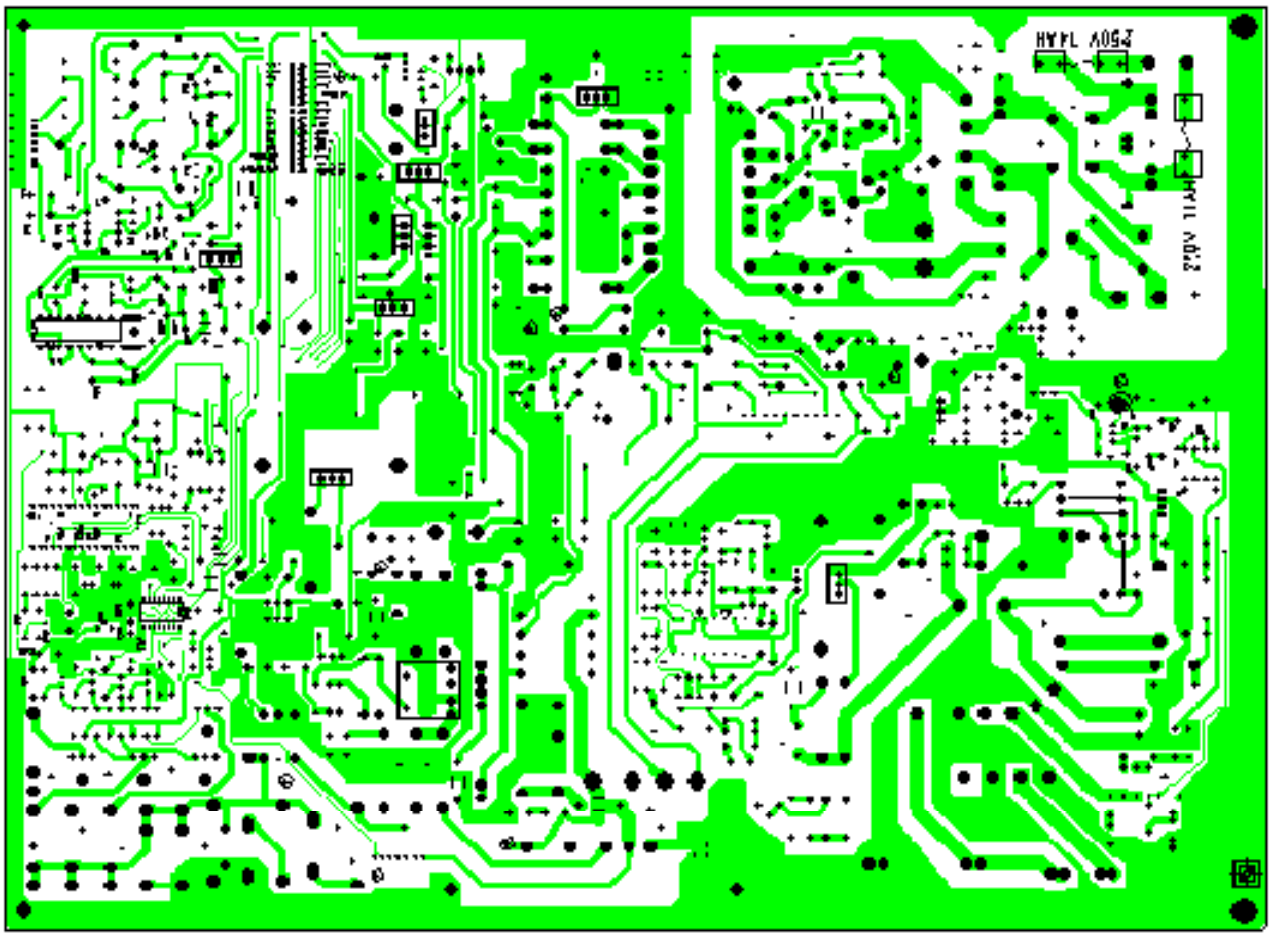
DRAWN	PLANNED	CHECKED	APPROVED

COMPANY:			
TITLE: H Board			
DRAWN:	DATED: 04.04.21		
CHECKED:	DATED:		
QUALITY CONTROL:	DATED:		
RELEASED:	DATED:		
CODE:	SIZE: A3	DRAWING NO: 2006.05,24	REV: 00
SCALE:		SHEET: OF	

7. Board Diagram

CONFIDENTIAL

7-1 A(MAIN)-Board



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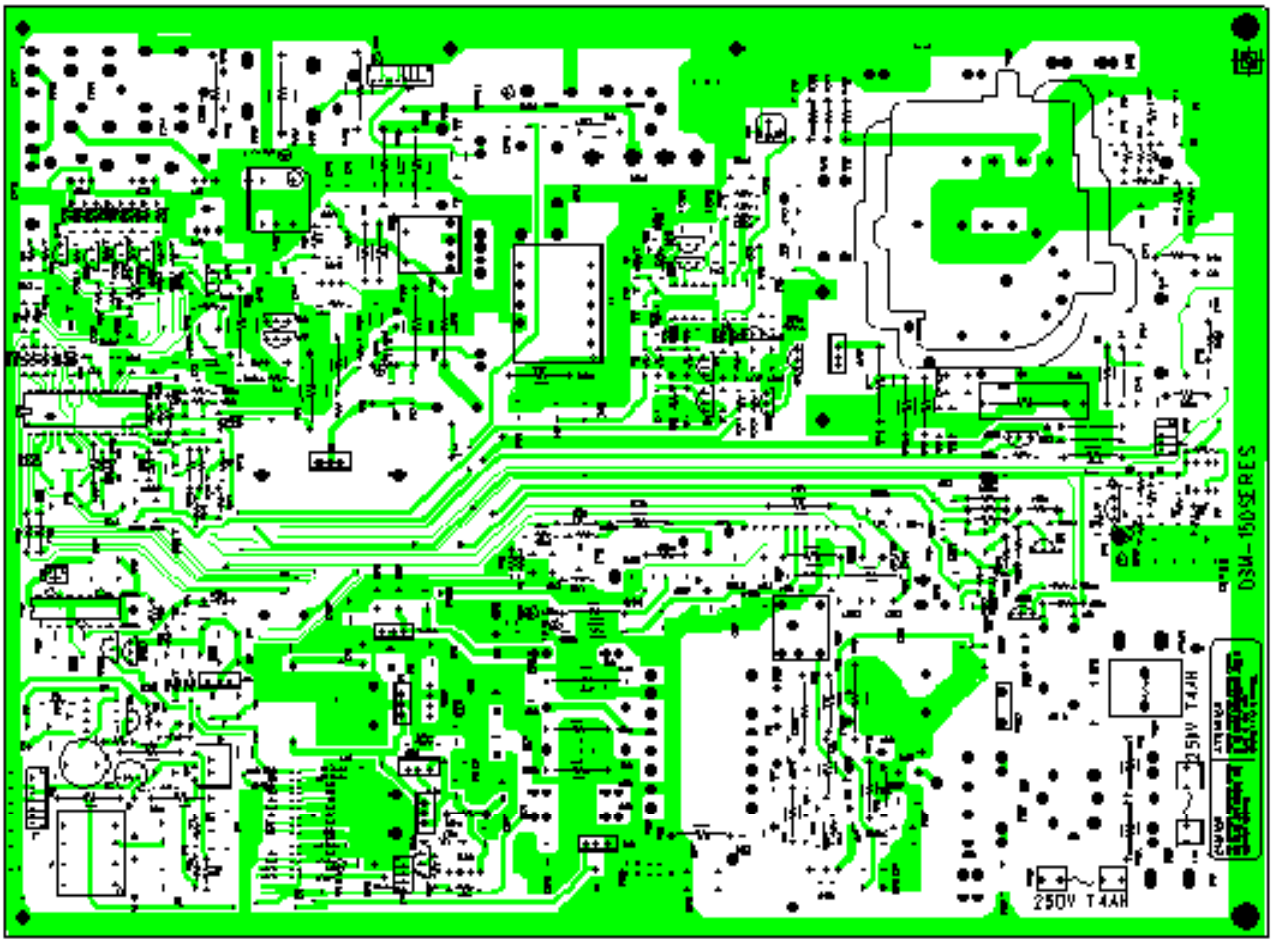
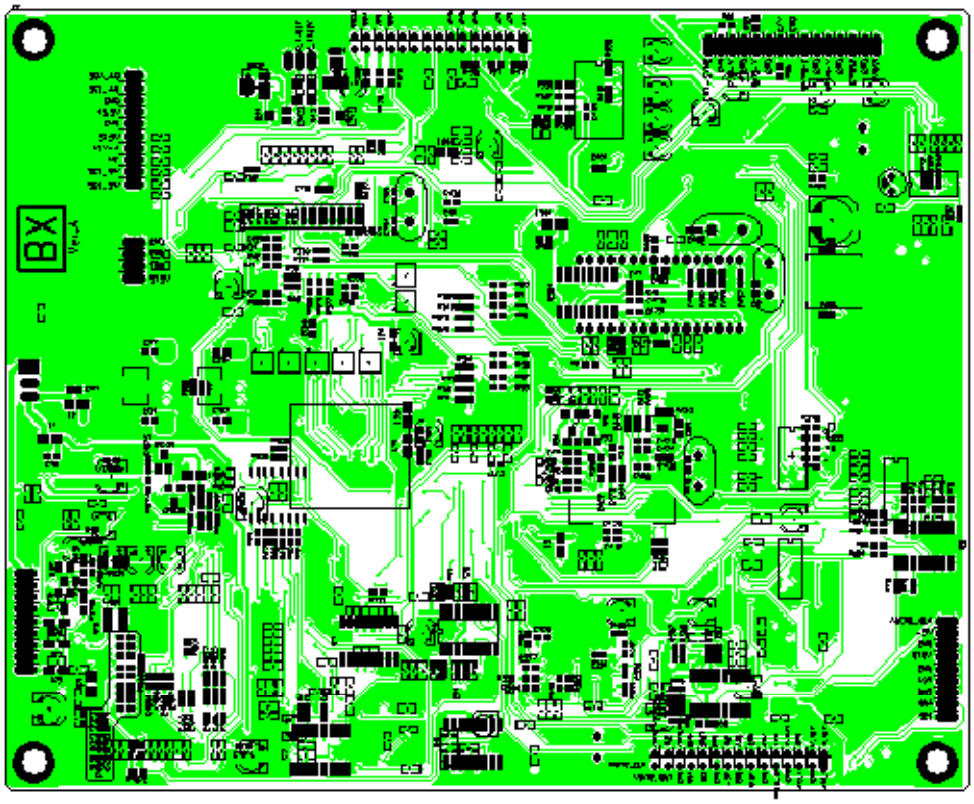


<TOP>

7-2 BX-Board



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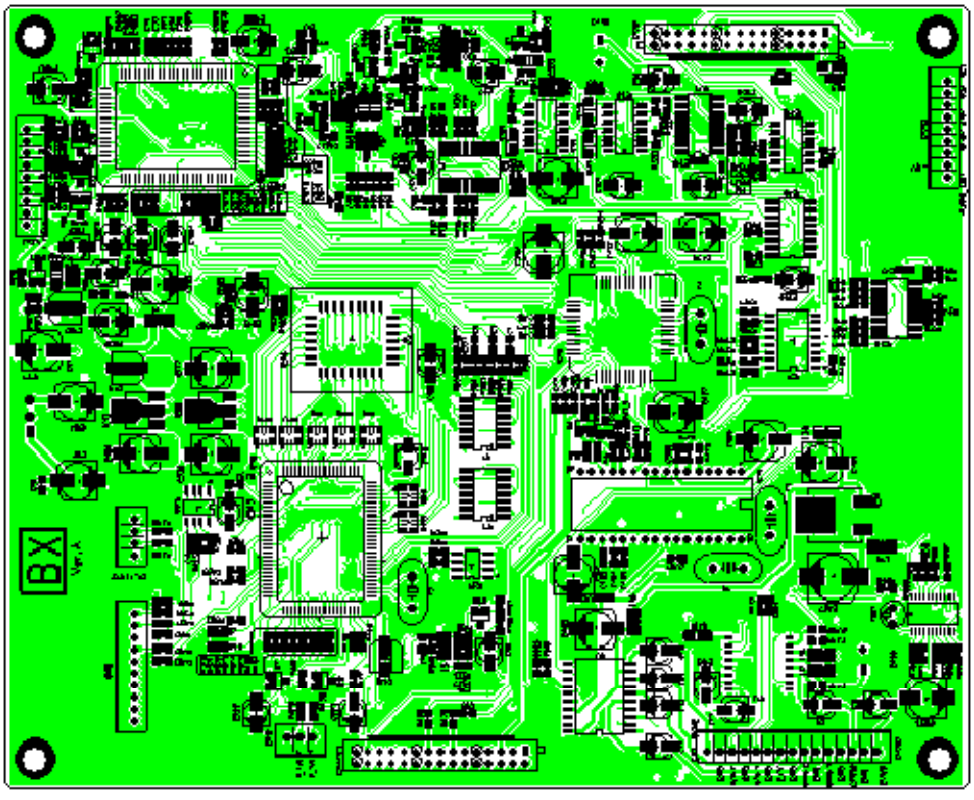

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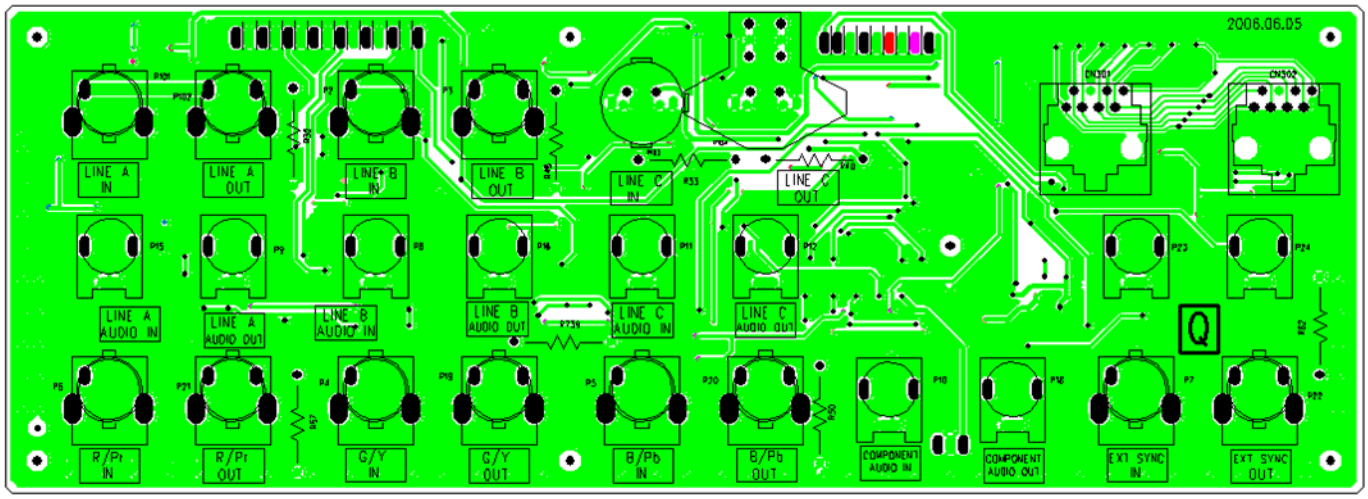
7-3 Q-Board



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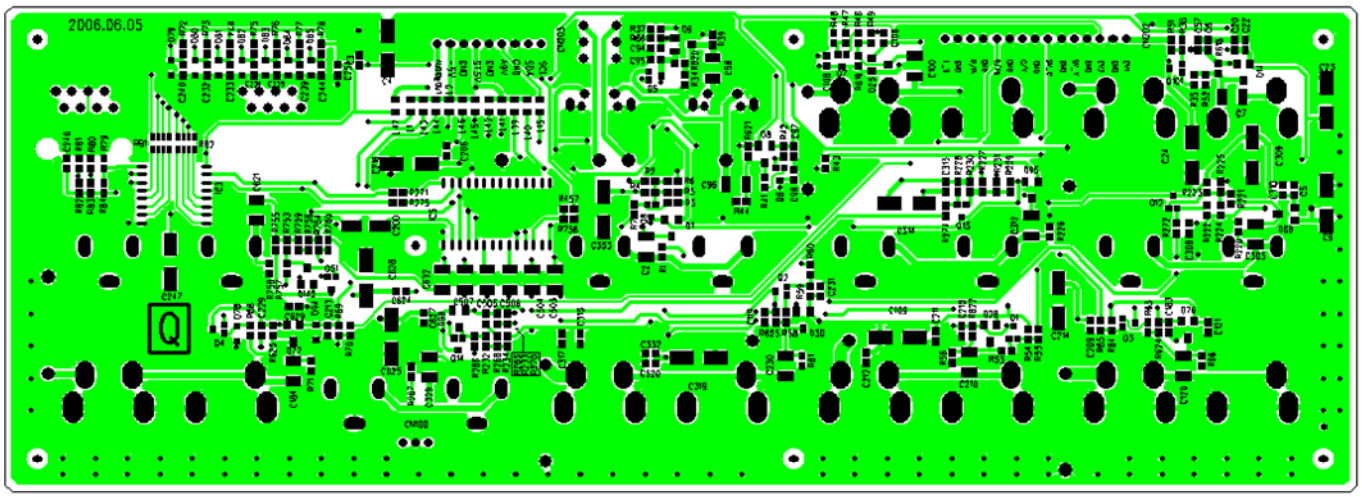

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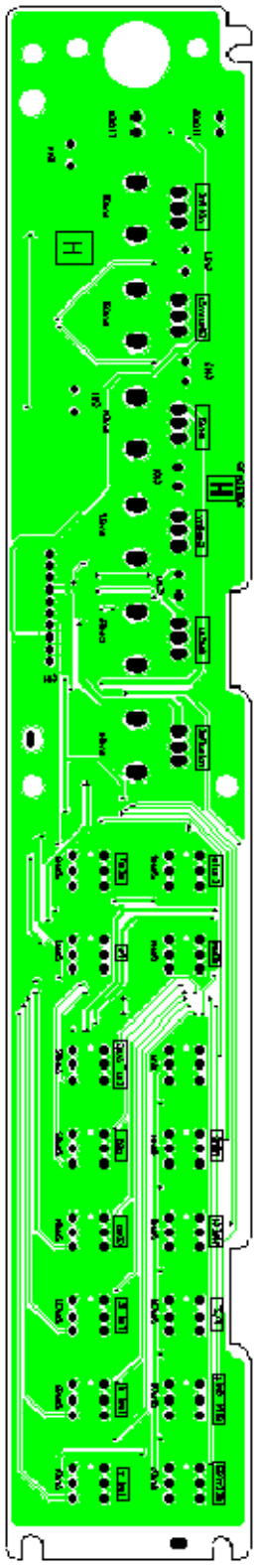
7-4 H-Board



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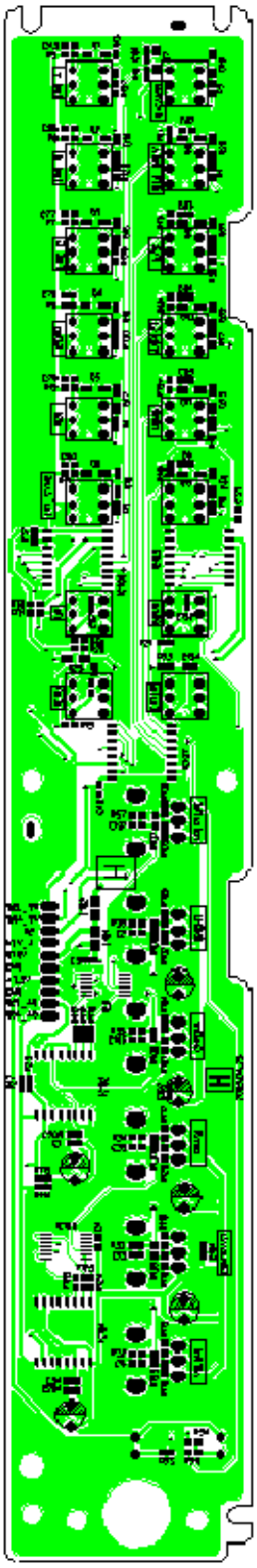

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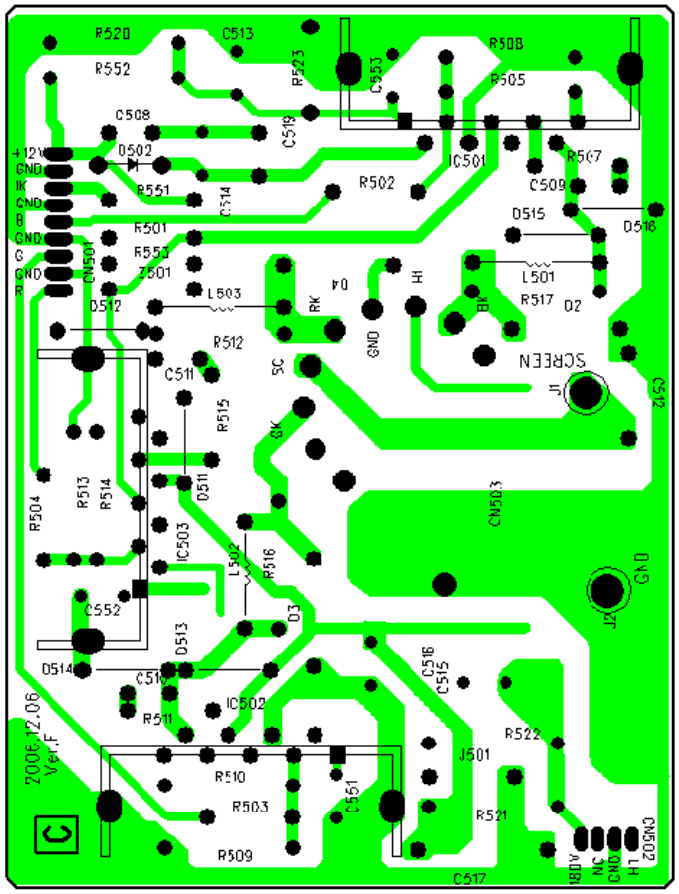
7-5 C, T, X-Board

<C-Board>



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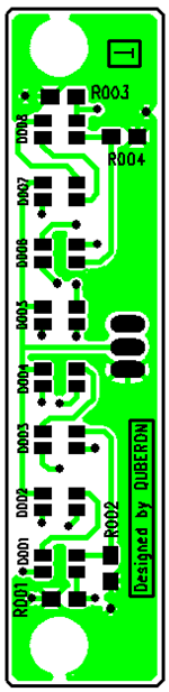
<T-Board>



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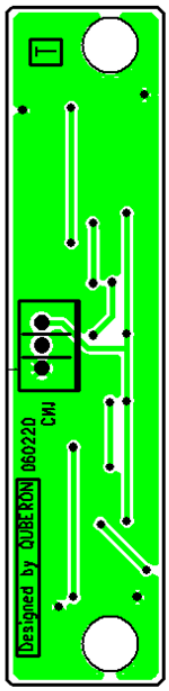

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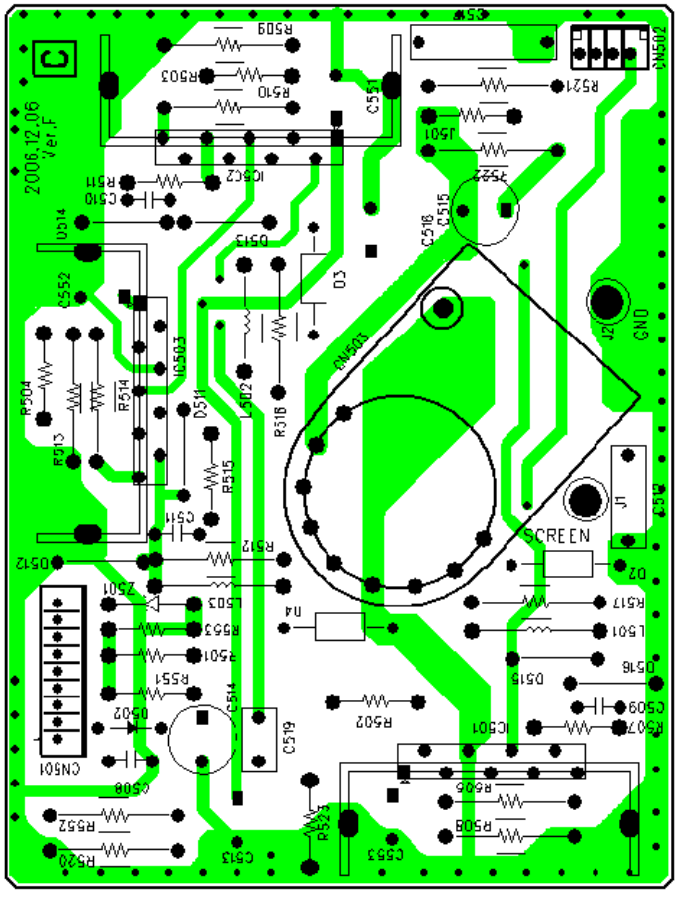

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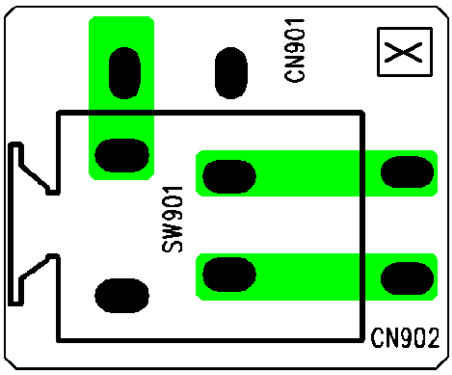
<X-Board>



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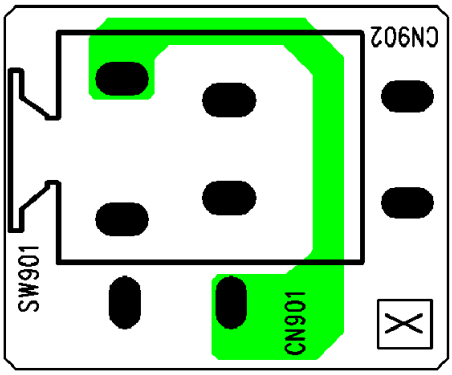

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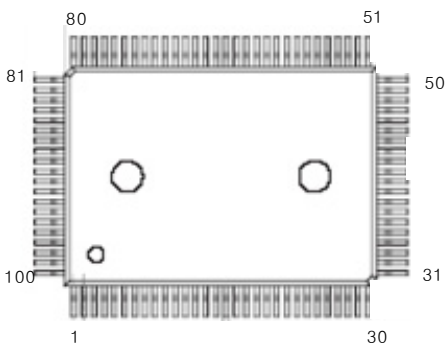
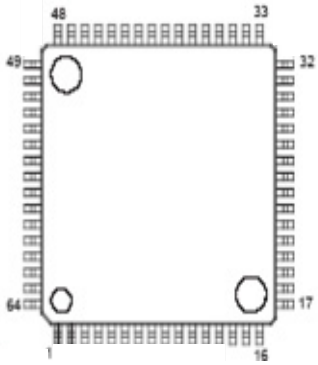
8. Semiconductors

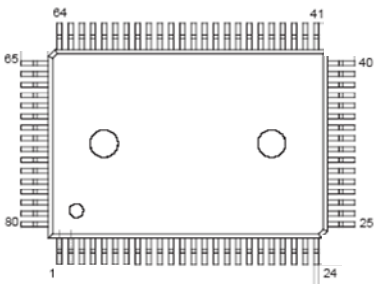
IC



SDA5550M



CXA2101AQ



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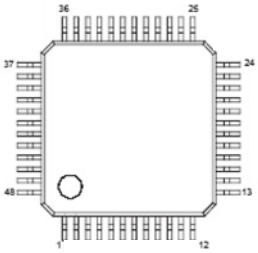
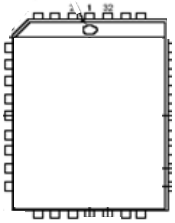
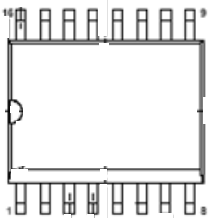


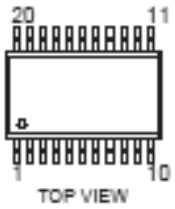
CXA2171Q



SST39VF040



PCF8591T



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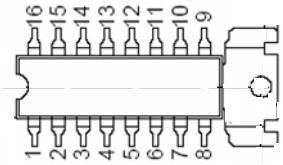
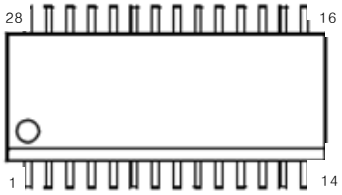
PCF8574T

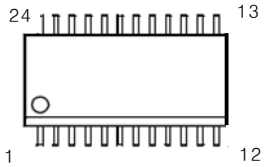


AN7512

STV9118
TDA9141



TES6422



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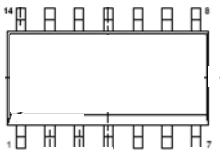

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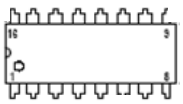
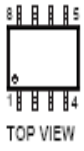
74HC04D
14070B
14011B

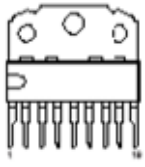


TL494CN

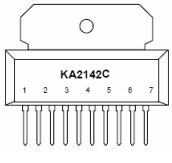
NJM4558



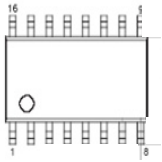
24C32AN
MAX1232



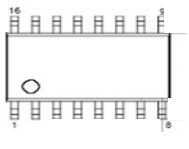
TEA6111Q



KA2142



CXA1875AM



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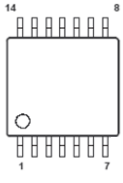
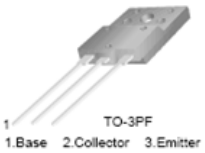
74HC4538



TLC274CPWR

IC, TRANSISTOR, DIODE

D3SBAB60-4101



FJAF6920A

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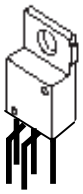
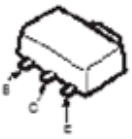
KDS226

2SC4081T106R
KSC1623
KSA1182
DTC144EKA

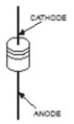


8S0965RCB-YDTU



2SA1211

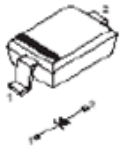
GM7808TC3R



1SS244
1N4148
UZ6.2BSB
MTZ7.5C
MTZJ27D
MTZ5.6

FFAF10U170STU

LL4148
RLZ3.9V
RLZ5.6V
RLZ12V



UDZ3.3V
UDZ5.6V

GM1117-2.5ST3T
GM1117-3.3ST3T

KIA431CLP
KSD1616-Y
2N3906
2N3904
DTA144ESA
DTC144ES
A

UF4004
UF4007
TVR10G

GUR460L-5700
SB540L-570B
31DF4

KIA7809
GM66150
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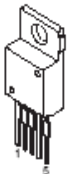
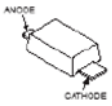
KIA7905
2SK2761-01MR
IRF634
IRF630

IRF210U



KI78R12

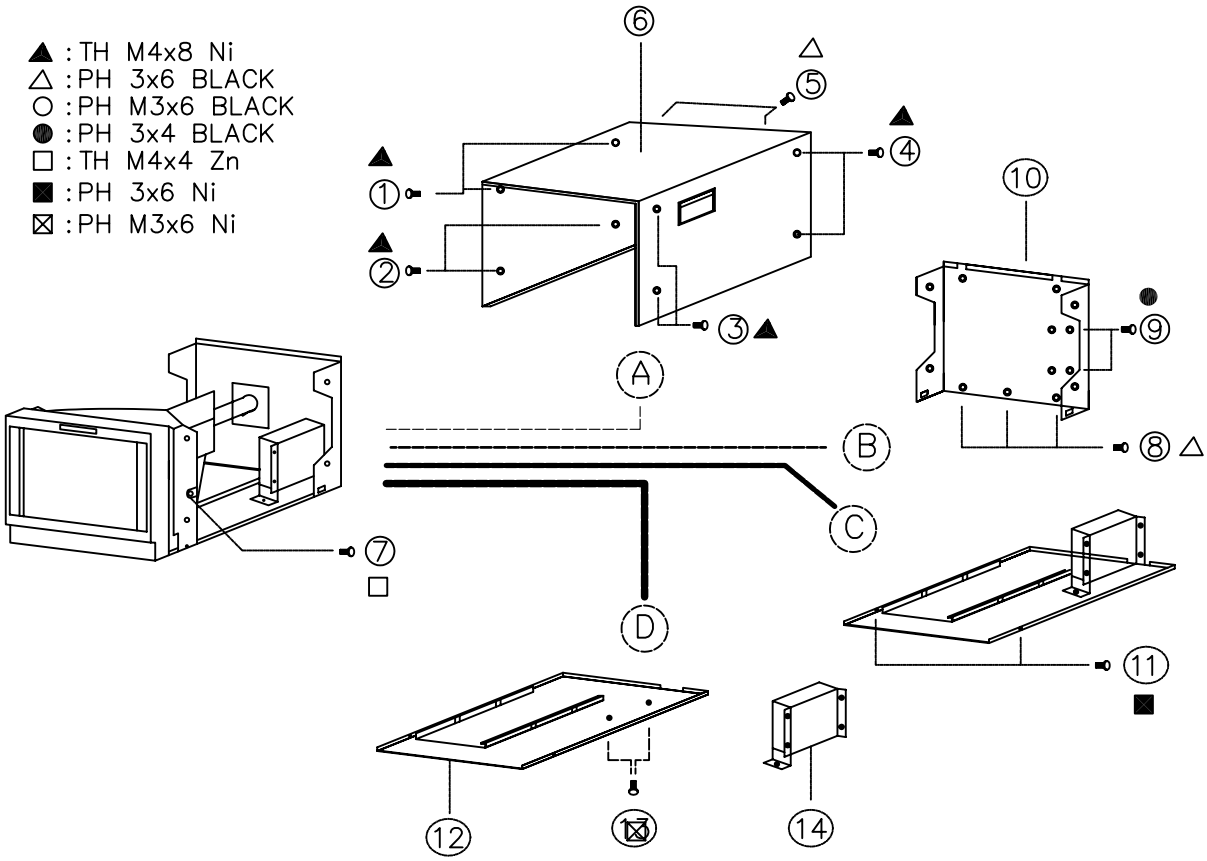


MA111

Section 9
Exploded Views

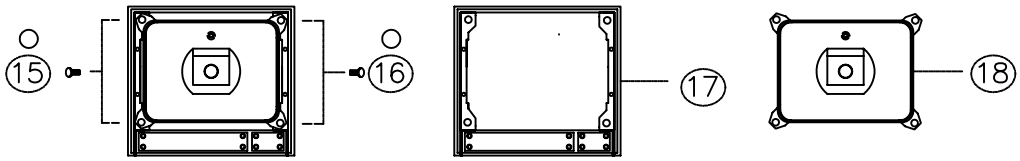
9-1. CHASSIS

▲ : TH M4x8 Ni
△ : PH 3x6 BLACK
○ : PH M3x6 BLACK
● : PH 3x4 BLACK
□ : TH M4x4 Zn
■ : PH 3x6 Ni
⊠ : PH M3x6 Ni



9-2. PICTURE TUBE

○ : TH TI 5x25 Zn



Ref.NO	Description	Remark	Ref.NO	Description	Remark
1	SCREW MACHINE		11	SCREW TAPPING	
2	SCREW MACHINE		12	CHASSIS BOTTOM ASSY	
3	SCREW MACHINE		13	SCREW MACHINE	
4	SCREW MACHINE		14	SDI SUB BRACKET ASSY	
5	SCREW TAPPING		15	SCREW TAPPING	
6	CHASSIS TOP COVER ASSY		16	SCREW TAPPING	
7	SCREW MACHINE		17	PLASTIC FRONT MASK ASSY	
8	SCREW TAPPING		18	PICTURE TUBE M36 ASSY	
9	SCREW MACHINE		19		
10	CHASSIS REAR COVER ASSY		20		

10. Electrical Parts List

H기판

<RESISTOR>

Ref.No	Description		Remark	
R1	RES, CHIP	560	5%	1/16W
R2	RES, CHIP	560	5%	1/16W
R3	RES, CHIP	560	5%	1/16W
R4	RES, CHIP	560	5%	1/16W
R5	RES, CHIP	2.2K	5%	1/16W
R6	RES, CHIP	2.2K	5%	1/16W
R7	RES, CHIP	2.2K	5%	1/16W
R8	RES, CHIP	2.2K	5%	1/16W
R9	RES, CHIP	2.2K	5%	1/16W
R10	RES, CHIP	2.2K	5%	1/16W
R11	RES, CHIP	2.2K	5%	1/16W
R12	RES, CHIP	2.2K	5%	1/16W
R13	RES, CHIP	2.2K	5%	1/16W
R14	RES, CHIP	2.2K	5%	1/16W
R15	RES, CHIP	2.2K	5%	1/16W
R16	RES, CHIP	560	5%	1/16W
R17	RES, CHIP	560	5%	1/16W
R18	RES, CHIP	560	5%	1/16W
R19	RES, CHIP	0		1/16W
R20	RES, CHIP	1.5K	5%	1/16W
R21	RES, CHIP	3K	5%	1/16W
R22	RES, CHIP	4.7K	5%	1/16W
R23	RES, CHIP	330	5%	1/16W
R25	RES, CHIP	220	5%	1/16W
R26	RES, CHIP	2.2K	5%	1/16W
R27	RES, CHIP	220	5%	1/16W
R28	RES, CHIP	2.2K	5%	1/16W
R30	RES, CHIP	4.7K	5%	1/16W
R31	RES, CHIP	4.7K	5%	1/16W
R32	RES, CHIP	150K	5%	1/16W
R33	RES, CHIP	150K	5%	1/16W
R34	RES, CHIP	150K	5%	1/16W
R35	RES, CHIP	150K	5%	1/16W
R36	RES, CHIP	150K	5%	1/16W
R37	RES, CHIP	150K	5%	1/16W
R38	RES, CHIP	560	5%	1/16W
R101	RES, CHIP	470K	5%	1/16W
R102	RES, CHIP	470K	5%	1/16W
R103	RES, CHIP	470K	5%	1/16W
R104	RES, CHIP	470K	5%	1/16W
R105	RES, CHIP	470K	5%	1/16W
R106	RES, CHIP	470K	5%	1/16W
R107	RES, CHIP	33K	5%	1/16W
R108	RES, CHIP	33K	5%	1/16W
R109	RES, CHIP	33K	5%	1/16W
R110	RES, CHIP	220	5%	1/16W
R111	RES, CHIP	220	5%	1/16W
R112	RES, CHIP	220	5%	1/16W
R113	RES, CHIP	4.7K	5%	1/16W
R114	RES, CHIP	4.7K	5%	1/16W
R115	RES, CHIP	470K	5%	1/16W
R116	RES, CHIP	470K	5%	1/16W
R117	RES, CHIP	470K	5%	1/16W
R118	RES, CHIP	470K	5%	1/16W
R119	RES, CHIP	470K	5%	1/16W
R120	RES, CHIP	470K	5%	1/16W
R121	RES, CHIP	33K	5%	1/16W
R122	RES, CHIP	33K	5%	1/16W
R123	RES, CHIP	33K	5%	1/16W
R124	RES, CHIP	220	5%	1/16W
R125	RES, CHIP	220	5%	1/16W
R126	RES, CHIP	220	5%	1/16W
R127	RES, CHIP	560	5%	1/16W
R128	RES, CHIP	560	5%	1/16W
R129	RES, CHIP	560	5%	1/16W
R130	RES, CHIP	560	5%	1/16W
R125	RES, CHIP	220	5%	1/16W
R127	RES, CHIP	560	5%	1/16W
R128	RES, CHIP	560	5%	1/16W
R129	RES, CHIP	560	5%	1/16W
R130	RES, CHIP	560	5%	1/16W

<CAPACITOR>

Ref.No	Description		Remark	
C1	CERAMIC, CHIP	104	Z	50V
C2	CERAMIC, CHIP	104	Z	50V
C3	CERAMIC, CHIP	104	Z	50V
C4	CERAMIC, CHIP	104	Z	50V
C5	CERAMIC, CHIP	104	Z	50V
C6	CERAMIC, CHIP	103	Z	50V
C13	CERAMIC, CHIP	104	Z	50V
C33	CERAMIC, CHIP	104	Z	50V
C34	CERAMIC, CHIP	104	Z	50V
C35	CERAMIC, CHIP	104	Z	50V
C37	CERAMIC, CHIP	104	Z	50V
C40	CERAMIC, CHIP	104	Z	50V
C41	ELECT	100uF		16V
C44	ELECT	100uF		16V
C45	CERAMIC, CHIP	103	Z	50V
C68	CERAMIC, CHIP	103	Z	50V
C77	CERAMIC, CHIP	103	Z	50V
C78	CERAMIC, CHIP	103	Z	50V
C79	CERAMIC, CHIP	103	Z	50V
C80	CERAMIC, CHIP	103	Z	50V
C81	CERAMIC, CHIP	103	Z	50V
C82	CERAMIC, CHIP	103	Z	50V
C83	CERAMIC, CHIP	103	Z	50V
C84	CERAMIC, CHIP	103	Z	50V
C85	CERAMIC, CHIP	103	Z	50V
C86	CERAMIC, CHIP	103	Z	50V
C87	CERAMIC, CHIP	103	Z	50V
C101	ELECT	100uF		16V
C102	CERAMIC, CHIP	104	Z	50V
C103	ELECT	100uF		16V
C104	CERAMIC, CHIP	104	Z	50V
C105	CERAMIC, CHIP	104	Z	50V
C107	CERAMIC, CHIP	104	Z	50V
C141	ELECT	100uF		16V
C142	ELECT	100uF		16V
C152	CERAMIC, CHIP	103	Z	50V
C152	CERAMIC, CHIP	103	Z	50V
C154	CERAMIC, CHIP	103	Z	50V
C204	CERAMIC, CHIP	104	Z	50V
C205	CERAMIC, CHIP	104	Z	50V

Ref.No	Description		Remark
	<FERRITE BEAD>		
L101	BEAD, CHIP	60	2012
L102	BEAD, CHIP	60	2012
	<DIODE>		
D1	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D2	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D3	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D4	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D5	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D6	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D7	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D8	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D9	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D10	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D11	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D12	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D13	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D14	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D15	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D16	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D17	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D18	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D19	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D20	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D21	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D22	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D23	ZENER DIODE, CHIP	UDZ3.3B	UMD2
D24	ZENER DIODE, CHIP	UDZ3.3B	UMD2
	<LED>		
LED101	LED	GREEN	
	<IC>		
IC2	IC, CHIP	TLC274CPWR	PW(R-PDSO-G)
IC102	IC, CHIP	PCF8591T	SO16
IC103	IC, CHIP	TLC274CPWR	PW(R-PDSO-G)
IC104	IC, CHIP	PCF8591T	SO16
IC105	IC, CHIP	PCF8574T	SO16
IC106	IC, CHIP	PCF8574T	SO16
IC107	IC, CHIP	PCF8574T	SO16
	<VOLUME>		
RV101	VR	10K	
RV102	VR	10K	
RV103	VR	10K	
RV104	VR	10K	
RV105	VR	10K	
RV106	VR	10K	
	<SWITCH>		
SW1	TACT SWITCH	SL-02Y	
SW101	TACT SWITCH	SL-02Y	
SW102	TACT SWITCH	SL-02Y	
SW103	TACT SWITCH	SL-02Y	
SW104	TACT SWITCH	SL-02Y	
SW105	TACT SWITCH	SL-02Y	
SW106	TACT SWITCH	SL-02Y	
SW107	TACT SWITCH	SL-02Y	
SW108	TACT SWITCH	SL-02Y	
SW109	TACT SWITCH	SL-02Y	
SW110	TACT SWITCH	SL-02Y	
SW111	TACT SWITCH	SL-02Y	
SW112	TACT SWITCH	SL-01	
SW113	TACT SWITCH	SL-01	
SW114	TACT SWITCH	SL-01	
SW115	TACT SWITCH	SL-01	
	<CONNECTOR>		
CN1	CONNECTOR	15P	SMW-200-15P

C기판

	<RESISTOR>			
R501	RES, CARBON	22K	5%	1/4W
R502	RES, CARBON	1K	5%	1/4W
R503	RES, CARBON	1K	5%	1/4W
R504	RES, CARBON	1K	5%	1/4W
R505	RES, CARBON	47K	5%	1/2W
R507	RES, CARBON	220	5%	1/4W
R508	RES, CARBON	1K	5%	1/2W
R509	RES, CARBON	1K	5%	1/2W
R510	RES, CARBON	47K	5%	1/2W
R511	RES, CARBON	220	5%	1/4W
R512	RES, CARBON	2.7K	5%	1W
R513	RES, CARBON	1K	5%	1/2W
R514	RES, CARBON	47K	5%	1/2W
R515	RES, CARBON	220	5%	1/4W
R516	RES, CARBON	2.7K	5%	1W
R517	RES, CARBON	2.7K	5%	1W
R520	RES, CARBON	1.5K	5%	1/2W
R521	RES, CARBON	100	5%	1/2W
R522	RES, CARBON	1M	5%	1/2W
R523	RES, CARBON	22K	5%	1/4W
R551	RES, CARBON	120K	5%	1/4W
R552	RES, CARBON	6.8K	5%	1/2W
R553	RES, CARBON	12K	5%	1/4W
J501	RES, CARBON	0		1/4W

	<CAPACITOR>		
C508	MYLAR	47nF	100V
C509	CERAMIC	470pF	500V
C510	CERAMIC	470pF	500V
C511	CERAMIC	470pF	500V
C512	CERAMIC	10nF	3K
C513	ELECT	100uF	16V
C514	ELECT	220uF	25V
C515	ELECT	4.7uF	250V
C516	ELECT	10uF	250V
C517	MPP	220nF	250V
C519	MYLAR	22nF	100V
C551	ELECT	1uF	50V
C552	ELECT	1uF	50V
C553	ELECT	1uF	50V
	<COIL>		
L501	INDUCTOR	4.7uH	ALO4TB
L502	INDUCTOR	4.7uH	ALO4TB
L503	INDUCTOR	4.7uH	ALO4TB

Ref.No	Description		Remark
	<DIODE>		
D2	SURGE ABSORBER	200V	
D3	SURGE ABSORBER	200V	
D4	SURGE ABSORBER	200V	
D502	DIODE	1N4148	DO-35 LF
D511	DIODE	UF4004	DO-41 LF
D512	DIODE	UF4004	DO-41 LF
D513	DIODE	UF4004	DO-41 LF
D514	DIODE	UF4004	DO-41 LF
D515	DIODE	UF4004	DO-41 LF
D516	DIODE	UF4004	DO-41 LF
Z501	ZENER DIODE	MTZ5.6B	
	<IC>		
IC501	IC	TDA6111Q	SOT111-1
IC502	IC	TDA6111Q	SOT111-1
IC503	IC	TDA6111Q	SOT111-1
	<CONNECTOR>		
J1	CONNECTOR	1P	YFW 800-01
J2	CONNECTOR	1P	YFW 800-01
CN501	CONNECTOR	4P	SMW-200-4P
CN502	CONNECTOR	9P	SMW-200-9P
	<JACK>		
CN503	CRT SOCKET	ISH095	

Q기판

Ref.No	Description			Remark
	<RESISTOR>			
R1	RES, CHIP	100K	5%	1/16W
R2	RES, CHIP	100	5%	1/16W
R3	RES, CHIP	15K	5%	1/16W
R6	RES, CHIP	100K	5%	1/16W
R7	RES, CHIP	100	5%	1/16W
R32	RES, CARBON	75	5%	1/2W
R33	RES, CARBON	75	5%	1/2W
R34	RES, CHIP	100	5%	1/16W
R35	RES, CHIP	100	5%	1/16W
R36	RES, CHIP	1.5K	5%	1/16W
R37	RES, CHIP	100	5%	1/16W
R38	RES, CHIP	1.5K	5%	1/16W
R39	RES, CHIP	100K	5%	1/16W
R40	RES, CARBON	75	5%	1/2W
R41	RES, CHIP	100	5%	1/16W
R42	RES, CHIP	1.5K	5%	1/16W
R43	RES, CHIP	100	5%	1/16W
R44	RES, CHIP	100K	5%	1/16W
R45	RES, CARBON	75	5%	1/2W
R46	RES, CHIP	100	5%	1/16W
R47	RES, CHIP	1.5K	5%	1/16W
R48	RES, CHIP	100	5%	1/16W
R49	RES, CHIP	100K	5%	1/16W
R50	RES, CARBON	75	5%	1/2W
R51	RES, CHIP	100	5%	1/16W
R52	RES, CHIP	100K	5%	1/16W
R53	RES, CHIP	100	5%	1/16W
R54	RES, CHIP	1.5K	5%	1/16W
R55	RES, CHIP	100	5%	1/16W
R56	RES, CHIP	100K	5%	1/16W
R57	RES, CARBON	75	5%	1/2W
R58	RES, CHIP	100	5%	1/16W
R59	RES, CHIP	1.5K	5%	1/16W
R60	RES, CHIP	100	5%	1/16W
R61	RES, CHIP	100K	5%	1/16W
R62	RES, CARBON	75	5%	1/2W
R63	RES, CHIP	100	5%	1/16W
R65	RES, CHIP	100	5%	1/16W
R64	RES, CHIP	1.5K	5%	1/16W
R66	RES, CHIP	100K	5%	1/16W
R68	RES, CHIP	100	5%	1/16W
R69	RES, CHIP	1.5K	5%	1/16W
R70	RES, CHIP	100	5%	1/16W
R71	RES, CHIP	100K	5%	1/16W
R72	RES, CHIP	100K	5%	1/16W
R73	RES, CHIP	100K	5%	1/16W
R74	RES, CHIP	100K	5%	1/16W
R75	RES, CHIP	100K	5%	1/16W
R76	RES, CHIP	100K	5%	1/16W
R77	RES, CHIP	100K	5%	1/16W
R78	RES, CHIP	100K	5%	1/16W
R79	RES, CHIP	0	5%	1/16W
R80	RES, CHIP	0	5%	1/16W
R82	RES, CHIP	10K	5%	1/16W
R220	RES, CHIP	100K	5%	1/16W
R266	RES, CHIP	100K	5%	1/16W
R221	RES, CHIP	100	5%	1/16W
R222	RES, CHIP	15K	5%	1/16W
R225	RES, CHIP	100K	5%	1/16W
R226	RES, CHIP	100K	5%	1/16W
R227	RES, CHIP	100	5%	1/16W
R228	RES, CHIP	15K	5%	1/16W
R231	RES, CHIP	100K	5%	1/16W
R232	RES, CHIP	100	5%	1/16W
R233	RES, CHIP	15K	5%	1/16W
R267	RES, CHIP	100K	5%	1/16W
R270	RES, CHIP	100	5%	1/16W
R271	RES, CHIP	100	5%	1/16W
R272	RES, CHIP	100	5%	1/16W
R274	RES, CHIP	100	5%	1/16W
R275	RES, CHIP	100	5%	1/16W
R457	RES, CHIP	10	5%	1/16W
R618	RES, CHIP	150K	5%	1/16W
R619	RES, CHIP	150K	5%	1/16W
R620	RES, CHIP	150K	5%	1/16W
R621	RES, CHIP	150K	5%	1/16W
R622	RES, CHIP	150K	5%	1/16W
R623	RES, CHIP	150K	5%	1/16W
R624	RES, CHIP	150K	5%	1/16W
R625	RES, CHIP	150K	5%	1/16W
R738	RES, CHIP	100K	5%	1/16W
R739	RES, CARBON	75	5%	1/2W
R754	RES, CHIP	15K	5%	1/16W
RB1	ARRAY RES, CHIP	22	5%	1/16W
RB2	ARRAY RES, CHIP	22	5%	1/16W
	<CAPACITOR>			
C2	CERAMIC, CHIP	106	Z	10V
C3	CERAMIC, CHIP	103	K	50V
C4	CAP AL, CHIP	100uF		16V
C5	CERAMIC, CHIP	103	K	50V
C6	CERAMIC, CHIP	103	K	50V
C7	CERAMIC, CHIP	226	Z	10V
C9	CAP AL, CHIP	100uF		16V
C20	CERAMIC, CHIP	103	K	50V

Ref.No	Description		Remark	
C22	CERAMIC, CHIP	103	K	50V
C23	CAP AL, CHIP	100uF		16V
C24	CAP AL, CHIP	100uF		16V
C57	CERAMIC, CHIP	103	K	50V
C58	CERAMIC, CHIP	226	Z	10V
C94	CERAMIC, CHIP	103	K	50V
C95	CERAMIC, CHIP	103	K	50V
C96	CERAMIC, CHIP	226	Z	10V
C97	CERAMIC, CHIP	103	K	50V
C98	CERAMIC, CHIP	103	K	50V
C100	CERAMIC, CHIP	226	Z	10V
C106	CERAMIC, CHIP	103	K	50V
C108	CERAMIC, CHIP	103	K	50V
C109	CAP AL, CHIP	100uF		16V
C119	CERAMIC, CHIP	103	K	50V
C120	CERAMIC, CHIP	226	Z	10V
C121	CERAMIC, CHIP	103	K	50V
C183	CERAMIC, CHIP	103	K	50V
C184	CERAMIC, CHIP	226	Z	10V
C200	CAP AL, CHIP	22uF		16V
C206	CERAMIC, CHIP	104	Z	50V
C209	CERAMIC, CHIP	103	K	50V
C210	CERAMIC, CHIP	226	Z	10V
C211	CERAMIC, CHIP	103	K	50V
C212	CERAMIC, CHIP	103	K	50V
C213	CERAMIC, CHIP	103	K	50V
C214	CAP AL, CHIP	100uF		16V
C215	CERAMIC, CHIP	103	K	50V
C216	CAP AL, CHIP	100uF		16V
C229	CERAMIC, CHIP	103	K	50V
C230	CERAMIC, CHIP	226	Z	10V
C231	CERAMIC, CHIP	103	K	50V
C232	CERAMIC, CHIP	102	K	50V
C233	CERAMIC, CHIP	102	K	50V
C234	CERAMIC, CHIP	102	K	50V
C235	CERAMIC, CHIP	102	K	50V
C239	CERAMIC, CHIP	102	K	50V
C240	CERAMIC, CHIP	102	K	50V
C244	CERAMIC, CHIP	102	K	50V
C246	CERAMIC, CHIP	103	K	50V
C247	CAP AL, CHIP	47uF		16V
C251	CERAMIC, CHIP	103	K	50V
C303	CERAMIC, CHIP	106	Z	10V
C306	CERAMIC, CHIP	103	K	50V
C309	CAP AL, CHIP	100uF		16V
C310	CERAMIC, CHIP	103	K	50V
C312	CERAMIC, CHIP	106	Z	10V
C313	CERAMIC, CHIP	103	K	50V
C314	CAP AL, CHIP	100uF		16V
C315	CERAMIC, CHIP	103	K	50V
C317	CERAMIC, CHIP	104	Z	50V
C319	CAP AL, CHIP	100uF		16V
C320	CERAMIC, CHIP	104	Z	50V
C329	CERAMIC, CHIP	106	Z	10V
C332	CERAMIC, CHIP	104	Z	50V
C353	CAP AL, CHIP	100uF		16V
C503	CERAMIC, CHIP	475	Z	16V
C504	CERAMIC, CHIP	475	Z	16V
C505	CERAMIC, CHIP	475	Z	16V
C506	CERAMIC, CHIP	475	Z	16V
C507	CERAMIC, CHIP	475	Z	16V

Ref.No	Description		Remark
	<DIODE>		
D1	DIODE, CHIP	KDS226	SOT-23
D8	DIODE, CHIP	KDS226	SOT-23
D9	DIODE, CHIP	KDS226	SOT-23
D14	DIODE, CHIP	KDS226	SOT-23
D25	DIODE, CHIP	KDS226	SOT-23
D26	DIODE, CHIP	KDS226	SOT-23
D30	DIODE, CHIP	KDS226	SOT-23
D76	DIODE, CHIP	KDS226	SOT-23
D78	DIODE, CHIP	1SS352-TPH3	USC
D79	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D80	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D81	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D82	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D83	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D84	ZENER DIODE, CHIP	UZD 5.6B	UMD2
D85	ZENER DIODE, CHIP	UZD 5.6B	UMD2
	<TRANSISTOR>		
Q1	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q2	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q3	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q4	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q5	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q6	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q7	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q8	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q12	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q13	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q14	TRANSISTOR, CHIP	2SC4081T106R	SOT23
Q101	TRANSISTOR, CHIP	2SC4081T106R	SOT23
	<IC>		
IC3	IC, CHIP	PCF8574T	SO16
IC5	IC, CHIP	TEA6422	SO28
	<JACK>		
P1	S_VIDEO JACK	S7932-14-211	
P2	BNC JACK	UCT-EX-025	
P3	BNC JACK	UCT-EX-026	
P4	BNC JACK	UCT-EX-025	
P5	BNC JACK	UCT-EX-025	
P6	BNC JACK	UCT-EX-025	
P7	BNC JACK	UCT-EX-025	
P8	AUDIO JACK	YPJ-01S24	
P9	AUDIO JACK	YPJ-01S24	
P10	AUDIO JACK	YPJ-01S24	
P11	AUDIO JACK	YPJ-01S24	
P12	AUDIO JACK	YPJ-01S24	
P15	AUDIO JACK	YPJ-01S24	
P16	AUDIO JACK	YPJ-01S24	
P18	AUDIO JACK	YPJ-01S24	
P19	BNC JACK	UCT-EX-026	
P20	BNC JACK	UCT-EX-026	
P21	BNC JACK	UCT-EX-026	
P22	BNC JACK	UCT-EX-026	
P101	BNC JACK	UCT-EX-025	
P102	BNC JACK	UCT-EX-026	
P103	S_VIDEO JACK	S7945-14-201	
REMOTE_IN		MODULAR JACI	8PIN

Ref.No	Description		Remark
	<CONNECTOR>		
CN100	CONNECTOR	2PIN	SMW-200-2P
CN202	CONNECTOR	15PIN	SMW-200-15P
CN203	CONNECTOR	9P	SMW-200-9P

T기판

	<RESISTOR>			
R001	RES, CHIP	33	5%	1/10W
R002	RES, CHIP	4.7	5%	1/10W
R003	RES, CHIP	4.7	5%	1/10W
R004	RES, CHIP	33	5%	1/10W
	<LED>			
D001	LED, CHIP	SLS-YGUR302TM		
D002	LED, CHIP	SLS-YGUR302TM		
D003	LED, CHIP	SLS-YGUR302TM		
D004	LED, CHIP	SLS-YGUR302TM		
D005	LED, CHIP	SLS-YGUR302TM		
D006	LED, CHIP	SLS-YGUR302TM		
D007	LED, CHIP	SLS-YGUR302TM		
D008	LED, CHIP	SLS-YGUR302TM		
	<CONNECTOR>			
CN4	CONNECTOR	3PIN	SMW-200-3P	

X기판

	<SWITCH>		
SW901	PUSH SWITCH	ROCKER13 2197BC	
	<CONNECTOR>		
CN901	CONNECTOR	2PIN	YFW 800-02
CN902	CONNECTOR	2PIN	YFW 800-02

B기판

	<RESISTOR>			
R1	RES, CHIP	4.7K	5%	1/16W
R2	RES, CHIP	75	5%	1/16W
R3	RES, CHIP	10K	5%	1/16W
R4	RES, CHIP	10K	5%	1/16W
R5	RES, CHIP	22	5%	1/16W
R6	RES, CHIP	22	5%	1/16W
R7	RES, CHIP	1K	5%	1/16W
R8	RES, CHIP	1.3K	5%	1/16W
R9	RES, CHIP	1K	5%	1/16W
R10	RES, CHIP	1K	5%	1/16W
R11	RES, CHIP	1K	5%	1/16W
R12	RES, CHIP	1K	5%	1/16W
R13	RES, CHIP	2.2K	5%	1/16W
R14	RES, CHIP	47K	5%	1/16W
R15	RES, CHIP	6.2K	5%	1/16W
R16	RES, CHIP	4.7K	5%	1/16W
R17	RES, CHIP	75	5%	1/16W
R18	RES, CHIP	0	5%	1/16W
R19	RES, CHIP	100	5%	1/16W
R20	RES, CHIP	0	5%	1/16W
R21	RES, CHIP	1.5K	5%	1/16W
R22	RES, CHIP	100	5%	1/16W
R23	RES, CHIP	0	5%	1/16W
R24	RES, CHIP	0	5%	1/16W
R25	RES, CHIP	220	5%	1/16W
R26	RES, CHIP	220	5%	1/16W
R27	RES, CHIP	75	5%	1/16W
R28	RES, CHIP	75	5%	1/16W
R29	RES, CHIP	2.2K	5%	1/16W
R30	RES, CHIP	12K	5%	1/16W
R31	RES, CHIP	10K	5%	1/16W
R32	RES, CHIP	0	5%	1/16W
R33	RES, CHIP	100	5%	1/16W
R34	RES, CHIP	100	5%	1/16W
R35	RES, CHIP	4.7K	5%	1/16W
R36	RES, CHIP	4.7K	5%	1/16W
R37	RES, CHIP	100	5%	1/16W
R38	RES, CHIP	100	5%	1/16W
R39	RES, CHIP	100	5%	1/16W
R40	RES, CHIP	100	5%	1/16W
R41	RES, CHIP	100	5%	1/16W
R42	RES, CHIP	100	5%	1/16W
R43	RES, CHIP	0	5%	1/16W
R44	RES, CHIP	3.3K	5%	1/16W
R45	RES, CHIP	1K	5%	1/16W
R46	RES, CHIP	10	5%	1/16W
R47	RES, CHIP	100	5%	1/16W
R48	RES, CHIP	100	5%	1/16W
R49	RES, CHIP	100	5%	1/16W
R50	RES, CHIP	100	5%	1/16W
R51	RES, CHIP	100	5%	1/16W
R52	RES, CHIP	2K	5%	1/16W
R53	RES, CHIP	6.8K	5%	1/16W
R54	RES, CHIP	22K	5%	1/16W
R55	RES, CHIP	2K	5%	1/16W
R56	RES, CHIP	10K	5%	1/16W
R57	RES, CHIP	2.2K	5%	1/16W
R58	RES, CHIP	100	5%	1/16W
R59	RES, CHIP	100	5%	1/16W
R60	RES, CHIP	100	5%	1/16W
R61	RES, CHIP	100	5%	1/16W
R62	RES, CHIP	100	5%	1/16W
R63	RES, CHIP	100	5%	1/16W
R64	RES, CHIP	100	5%	1/16W
R65	RES, CHIP	100	5%	1/16W
R66	RES, CHIP	100	5%	1/16W
R67	RES, CHIP	100	5%	1/16W
R68	RES, CHIP	1K	5%	1/16W
R69	RES, CHIP	100	5%	1/16W
R70	RES, CHIP	100	5%	1/16W
R71	RES, CHIP	0	5%	1/16W
R73	RES, CHIP	100	5%	1/16W
R74	RES, CHIP	100	5%	1/16W
R75	RES, CHIP	100	5%	1/16W
R76	RES, CHIP	100	5%	1/16W
R77	RES, CHIP	100	5%	1/16W
R78	RES, CHIP	100	5%	1/16W
R79	RES, CHIP	100	5%	1/16W
R80	RES, CHIP	100	5%	1/16W
R81	RES, CHIP	100	5%	1/16W
R82	RES, CHIP	100	5%	1/16W
R83	RES, CHIP	2.7K	5%	1/16W
R84	RES, CHIP	100	5%	1/16W
R85	RES, CHIP	100	5%	1/16W
R86	RES, CHIP	100	5%	1/16W
R87	RES, CHIP	0	5%	1/16W
R88	RES, CHIP	0	5%	1/16W

Ref.No	Description		Remark	
R89	RES, CHIP	0	5%	1/16W
R90	RES, CHIP	270	5%	1/16W
R91	RES, CHIP	270	5%	1/16W
R112	RES, CHIP	1.5K	5%	1/16W
R113	RES, CHIP	4.7K	5%	1/16W
R114	RES, CHIP	4.7K	5%	1/16W
R115	RES, CHIP	8.2K	5%	1/16W
R116	RES, CHIP	100	5%	1/16W
R117	RES, CHIP	100	5%	1/16W
R118	RES, CHIP	100	5%	1/16W
R119	RES, CHIP	100	5%	1/16W
R120	RES, CHIP	100	5%	1/16W
R121	RES, CHIP	100	5%	1/16W
R122	RES, CHIP	100	5%	1/16W
R123	RES, CHIP	100	5%	1/16W
R124	RES, CHIP	100	5%	1/16W
R125	RES, CHIP	100	5%	1/16W
R126	RES, CHIP	100	5%	1/16W
R127	RES, CHIP	100	5%	1/16W
R128	RES, CHIP	100	5%	1/16W
R129	RES, CHIP	0	5%	1/16W
R130	RES, CHIP	0	5%	1/16W
R131	RES, CHIP	0	5%	1/16W
R132	RES, CHIP	0	5%	1/16W
R133	RES, CHIP	0	5%	1/16W
R134	RES, CHIP	0	5%	1/16W
R135	RES, CHIP	0	5%	1/16W
R136	RES, CHIP	0	5%	1/16W
R137	RES, CHIP	0	5%	1/16W
R138	RES, CHIP	0	5%	1/16W
R139	RES, CHIP	0	5%	1/16W
R140	RES, CHIP	0	5%	1/16W
R161	RES, CHIP	10K	5%	1/16W
R188	RES, CHIP	100	5%	1/16W
R247	RES, CHIP	100	5%	1/16W
R255	RES, CHIP	10K	5%	1/16W
R256	RES, CHIP	10K	5%	1/16W
R257	RES, CHIP	10K	5%	1/16W
R258	RES, CHIP	10K	5%	1/16W
R259	RES, CHIP	220	5%	1/16W
R260	RES, CHIP	220	5%	1/16W
R328	RES, CHIP	100	5%	1/16W
R329	RES, CHIP	100	5%	1/16W
R330	RES, CHIP	100	5%	1/16W
R331	RES, CHIP	100	5%	1/16W
R348	RES, CHIP	4.7K	5%	1/16W
R349	RES, CHIP	4.7K	5%	1/16W
R356	RES, CHIP	4.7K	5%	1/16W
R357	RES, CHIP	4.7K	5%	1/16W
R358	RES, CHIP	4.7K	5%	1/16W
R359	RES, CHIP	100	5%	1/16W
R363	RES, CHIP	4.7K	5%	1/16W
R364	RES, CHIP	4.7K	5%	1/16W
R365	RES, CHIP	4.7K	5%	1/16W
R366	RES, CHIP	4.7K	5%	1/16W
R367	RES, CHIP	4.7K	5%	1/16W
R368	RES, CHIP	4.7K	5%	1/16W
R369	RES, CHIP	4.7K	5%	1/16W
R370	RES, CHIP	4.7K	5%	1/16W
R371	RES, CHIP	4.7K	5%	1/16W
R372	RES, CHIP	4.7K	5%	1/16W
R373	RES, CHIP	4.7K	5%	1/16W
R374	RES, CHIP	4.7K	5%	1/16W
R375	RES, CHIP	4.7K	5%	1/16W
R376	RES, CHIP	100	5%	1/16W
R377	RES, CHIP	100	5%	1/16W
R378	RES, CHIP	100	5%	1/16W
R379	RES, CHIP	100	5%	1/16W
R380	RES, CHIP	100	5%	1/16W
R381	RES, CHIP	100	5%	1/16W
R382	RES, CHIP	100	5%	1/16W
R383	RES, CHIP	100	5%	1/16W
R384	RES, CHIP	100	5%	1/16W
R389	RES, CHIP	100	5%	1/16W
R391	RES, CHIP	4.7K	5%	1/16W
R392	RES, CHIP	4.7K	5%	1/16W
R395	RES, CHIP	100	5%	1/16W
R401	RES, CHIP	100	5%	1/16W
R407	RES, CHIP	100	5%	1/16W
R410	RES, CHIP	100	5%	1/16W
R411	RES, CHIP	100	5%	1/16W
R412	RES, CHIP	100	5%	1/16W
R413	RES, CHIP	100	5%	1/16W
R414	RES, CHIP	100	5%	1/16W
R415	RES, CHIP	100	5%	1/16W
R416	RES, CHIP	100	5%	1/16W
R417	RES, CHIP	100	5%	1/16W
R418	RES, CHIP	10K	5%	1/16W
R419	RES, CHIP	0	5%	1/16W
R420	RES, CHIP	2K	5%	1/16W
R421	RES, CHIP	330K	5%	1/16W
R423	RES, CHIP	0	5%	1/16W
R424	RES, CHIP	0	5%	1/16W
R425	RES, CHIP	100	5%	1/16W
R426	RES, CHIP	100	5%	1/16W
R427	RES, CHIP	100	5%	1/16W
R428	RES, CHIP	100	5%	1/16W
R429	RES, CHIP	0	5%	1/16W
R430	RES, CHIP	0	5%	1/16W
R431	RES, CHIP	10K	5%	1/16W
R436	RES, CHIP	100	5%	1/16W
R439	RES, CHIP	100	5%	1/16W
R447	RES, CHIP	100	5%	1/16W
R450	RES, CHIP	100	5%	1/16W
R451	RES, CHIP	47K	5%	1/16W
R452	RES, CHIP	10K	5%	1/16W
R454	RES, CHIP	4.7K	5%	1/16W
R455	RES, CHIP	4.7K	5%	1/16W
R456	RES, CHIP	4.7K	5%	1/16W
R458	RES, CHIP	4.7K	5%	1/16W
R459	RES, CHIP	1K	5%	1/16W
R460	RES, CHIP	1K	5%	1/16W
R462	RES, CHIP	100	5%	1/16W
R463	RES, CHIP	100	5%	1/16W
R464	RES, CHIP	1K	5%	1/16W
R465	RES, CHIP	82K	5%	1/16W
R466	RES, CHIP	15K	5%	1/16W
R470	RES, CHIP	100	5%	1/16W
R471	RES, CHIP	100	5%	1/16W
R474	RES, CHIP	330	5%	1/16W
R475	RES, CHIP	1K	5%	1/16W
R477	RES, CHIP	1K	5%	1/16W
R479	RES, CHIP	100	5%	1/16W

Ref.No	Description		Remark	
R480	RES, CHIP	100	5%	1/16W
R499	RES, CHIP	3.9K	5%	1/16W
R501	RES, CHIP	75	5%	1/16W
R502	RES, CHIP	75	5%	1/16W
R503	RES, CHIP	75	5%	1/16W
R504	RES, CHIP	75	5%	1/16W
R505	RES, CHIP	75	5%	1/16W
R506	RES, CHIP	75	5%	1/16W
R509	RES, CHIP	470	5%	1/16W
R546	RES, CHIP	10K	5%	1/16W
R547	RES, CHIP	68K	5%	1/16W
R548	RES, CHIP	1K	5%	1/16W
R550	RES, CHIP	4.7K	5%	1/16W
R551	RES, CHIP	2.7K	5%	1/16W
R552	RES, CHIP	4.7K	5%	1/16W
R553	RES, CHIP	10K	5%	1/16W
R554	RES, CHIP	100K	5%	1/16W
R555	RES, CHIP	100K	5%	1/16W
R556	RES, CHIP	10K	5%	1/16W
R557	RES, CHIP	3.3K	5%	1/16W
R563	RES, CHIP	12K	5%	1/16W
R564	RES, CHIP	100	5%	1/16W
R565	RES, CHIP	100	5%	1/16W
R566	RES, CHIP	10K	5%	1/16W
R761	RES, CHIP	4.7K	5%	1/16W
R762	RES, CHIP	100	5%	1/16W
R807	RES, CHIP	100	5%	1/16W
R808	RES, CHIP	100	5%	1/16W
R851	RES, CHIP	100	5%	1/16W
R852	RES, CHIP	100	5%	1/16W
R853	RES, CHIP	100	5%	1/16W
R855	RES, CHIP	100	5%	1/16W
R856	RES, CHIP	100	5%	1/16W
R857	RES, CHIP	100	5%	1/16W
R858	RES, CHIP	100	5%	1/16W
R859	RES, CHIP	100	5%	1/16W
R861	RES, CHIP	100	5%	1/16W
R901	RES, CHIP	10K	5%	1/16W
R902	RES, CHIP	10K	5%	1/16W
R903	RES, CHIP	100	5%	1/16W
R904	RES, CHIP	100	5%	1/16W
R905	RES, CHIP	10K	5%	1/16W
R906	RES, CHIP	10K	5%	1/16W
R911	RES, CHIP	22K	5%	1/16W
R912	RES, CHIP	22K	5%	1/16W
R913	RES, CHIP	10K	5%	1/16W
R914	RES, CHIP	6.8K	5%	1/16W
R915	RES, CHIP	0	5%	1/16W
R919	RES, CHIP	330	5%	1/16W
R1001	RES, CHIP	100	5%	1/16W
R1013	RES, CHIP	100	5%	1/16W
R1031	RES, CHIP	100	5%	1/16W
R1032	RES, CHIP	100	5%	1/16W
R1044	RES, CHIP	3.3K	5%	1/16W
R1045	RES, CHIP	330	5%	1/16W
R1046	RES, CHIP	3.3K	5%	1/16W
R1047	RES, CHIP	1K	5%	1/16W
R1048	RES, CHIP	3.3K	5%	1/16W
R1049	RES, CHIP	1K	5%	1/16W
R1053	RES, CHIP	3.3K	5%	1/16W
R1055	RES, CHIP	100	5%	1/16W

Ref.No	Description		Remark	
R1057	RES, CHIP	100	5%	1/16W
R1860	RES, CHIP	22K	5%	1/16W
R1862	RES, CHIP	100	5%	1/16W
R1863	RES, CHIP	100	5%	1/16W
R1864	RES, CHIP	100	5%	1/16W
R1865	RES, CHIP	3.3M	5%	1/16W
R1866	RES, CHIP	10K	5%	1/16W
R1867	RES, CHIP	15K	5%	1/16W
R1869	RES, CHIP	390	5%	1/16W
R1870	RES, CHIP	47K	5%	1/16W
R1871	RES, CHIP	0	5%	1/16W
R1872	RES, CHIP	330	5%	1/16W
R1915	RES, CHIP	2K	5%	1/16W
R3189	RES, CHIP	10K	5%	1/16W
R3198	RES, CHIP	10K	5%	1/16W
PR8	ARRAY RES, CHIP	22	5%	1/16W
PR9	ARRAY RES, CHIP	22	5%	1/16W
PR10	ARRAY RES, CHIP	22	5%	1/16W
PR11	ARRAY RES, CHIP	22	5%	1/16W
PR12	ARRAY RES, CHIP	22	5%	1/16W
PR13	ARRAY RES, CHIP	22	5%	1/16W
PR14	ARRAY RES, CHIP	22	5%	1/16W

<CAPACITOR>

C1	CERAMIC, CHIP	104	Z	50V
C2	CERAMIC, CHIP	12	J	16V
C3	CERAMIC, CHIP	104	Z	50V
C4	CERAMIC, CHIP	473	K	50V
C5	CERAMIC, CHIP	104	Z	50V
C6	CERAMIC, CHIP	471	J	16V
C7	CERAMIC, CHIP	474	Z	16V
C8	ELECT AL, CHIP	10uF		16V
C9	ELECT AL, CHIP	10uF		16V
C10	ELECT AL, CHIP	10uF		16V
C11	ELECT AL, CHIP	10uF		16V
C12	ELECT AL, CHIP	10uF		16V
C13	CERAMIC, CHIP	103	K	50V
C14	CERAMIC, CHIP	471	J	16V
C15	CERAMIC, CHIP	474	Z	16V
C16	CERAMIC, CHIP	474	Z	16V
C17	ELECT AL, CHIP	10uF		16V
C20	CERAMIC, CHIP	103	K	50V
C21	CERAMIC, CHIP	471	J	16V
C22	CERAMIC, CHIP	474	Z	16V
C23	CERAMIC, CHIP	474	Z	16V
C24	CERAMIC, CHIP	474	Z	16V
C26	CERAMIC, CHIP	474	Z	16V
C27	ELECT AL, CHIP	10uF		16V
C28	CERAMIC, CHIP	103	K	50V
C29	CERAMIC, CHIP	152	J	50V
C30	CERAMIC, CHIP	224	Z	25V
C31	CERAMIC, CHIP	104	Z	50V
C32	ELECT AL, CHIP	100uF		16V
C33	CERAMIC, CHIP	103	K	50V
C35	CERAMIC, CHIP	104	Z	50V
C36	CERAMIC, CHIP	103	K	50V
C37	CERAMIC, CHIP	152	J	50V
C38	CERAMIC, CHIP	104	Z	50V
C39	CERAMIC, CHIP	104	Z	50V
C40	CERAMIC, CHIP	104	Z	50V
C41	CERAMIC, CHIP	104	Z	50V
C42	CERAMIC, CHIP	103	K	50V

Ref.No	Description		Remark	
C45	CERAMIC, CHIP	152	J	50V
C46	CERAMIC, CHIP	152	J	50V
C49	ELECT AL, CHIP	47uF		16V
C50	CERAMIC, CHIP	104	Z	50V
C51	ELECT AL, CHIP	100uF		16V
C59	ELECT AL, CHIP	10uF		16V
C60	CERAMIC, CHIP	103	K	50V
C61	CERAMIC, CHIP	152	J	50V
C62	CERAMIC, CHIP	103	K	50V
C63	CERAMIC, CHIP	471	J	16V
C69	ELECT AL, CHIP	10uF		16V
C70	ELECT AL, CHIP	10uF		16V
C71	ELECT AL, CHIP	10uF		16V
C111	CERAMIC, CHIP	104	Z	50V
C131	CERAMIC, CHIP	104	Z	50V
C134	CERAMIC, CHIP	33	J	50V
C135	CERAMIC, CHIP	33	J	50V
C136	CERAMIC, CHIP	104	Z	50V
C137	CERAMIC, CHIP	104	Z	50V
C138	CERAMIC, CHIP	104	Z	50V
C139	CERAMIC, CHIP	104	Z	50V
C148	ELECT AL, CHIP	22uF		16V
C149	ELECT AL, CHIP	22uF		16V
C151	CERAMIC, CHIP	104	Z	50V
C153	CERAMIC, CHIP	104	Z	50V
C164	ELECT AL, CHIP	100uF		16V
C177	ELECT AL, CHIP	47uF		16V
C182	CERAMIC, CHIP	104	Z	50V
C186	CERAMIC, CHIP	104	Z	50V
C188	CERAMIC, CHIP	104	Z	50V
C189	CERAMIC, CHIP	104	Z	50V
C190	ELECT AL, CHIP	10uF		16V
C191	CERAMIC, CHIP	105	Z	16V
C193	ELECT AL, CHIP	10uF		16V
C194	ELECT AL, CHIP	100uF		16V
C217	CERAMIC, CHIP	104	Z	50V
C220	CERAMIC, CHIP	104	Z	50V
C222	ELECT AL, CHIP	10uF		16V
C223	ELECT AL, CHIP	10uF		16V
C227	CERAMIC, CHIP	561	J	50V
C236	ELECT AL, CHIP	100uF		16V
C237	CERAMIC, CHIP	104	Z	50V
C263	CERAMIC, CHIP	104	Z	50V
C264	ELECT AL, CHIP	47uF		16V
C265	ELECT AL, CHIP	47uF		16V
C298	CERAMIC, CHIP	105	Z	16V
C299	CERAMIC, CHIP	105	Z	16V
C300	CERAMIC, CHIP	103	K	50V
C302	CERAMIC, CHIP	103	K	50V
C304	CERAMIC, CHIP	103	K	50V
C305	ELECT AL, CHIP	10uF		16V
C307	MPP	474	Z	100V
C308	ELECT AL, CHIP	10uF		16V
C316	CERAMIC, CHIP	103	K	50V
C318	ELECT AL, CHIP	47uF		16V
C321	ELECT AL, CHIP	10uF		16V
C322	ELECT AL, CHIP	1uF		50V
C323	CERAMIC, CHIP	222	K	50V
C324	CERAMIC, CHIP	103	K	50V
C325	CERAMIC, CHIP	152	J	50V
C326	CERAMIC, CHIP	103	K	50V
C217	CERAMIC, CHIP	68	J	16V

Ref.No	Description		Remark	
C218	CERAMIC, CHIP	152	J	50V
C402	CERAMIC, CHIP	104	Z	50V
C403	CERAMIC, CHIP	105	Z	16V
C404	CERAMIC, CHIP	104	Z	50V
C405	ELECT AL, CHIP	47uF		16V
C409	CERAMIC, CHIP	474	Z	16V
C410	CERAMIC, CHIP	474	Z	16V
C411	CERAMIC, CHIP	474	Z	16V
C412	CERAMIC, CHIP	474	Z	16V
C413	CERAMIC, CHIP	474	Z	16V
C414	CERAMIC, CHIP	474	Z	16V
C415	CERAMIC, CHIP	474	Z	16V
C416	CERAMIC, CHIP	474	Z	16V
C417	CERAMIC, CHIP	474	Z	16V
C418	CERAMIC, CHIP	474	Z	16V
C419	CERAMIC, CHIP	474	Z	16V
C420	CERAMIC, CHIP	474	Z	16V
C421	CERAMIC, CHIP	474	Z	16V
C422	CERAMIC, CHIP	474	Z	16V
C423	CERAMIC, CHIP	474	Z	16V
C424	CERAMIC, CHIP	105	Z	16V
C425	CERAMIC, CHIP	103	K	50V
C426	CERAMIC, CHIP	104	Z	50V
C427	ELECT AL, CHIP	47uF		16V
C428	CERAMIC, CHIP	104	Z	50V
C429	ELECT AL, CHIP	47uF		16V
C430	CERAMIC, CHIP	104	Z	50V
C431	CERAMIC, CHIP	104	Z	50V
C432	ELECT AL, CHIP	47uF		16V
C437	CERAMIC, CHIP	104	Z	50V
C451	CERAMIC, CHIP	104	Z	50V
C452	CERAMIC, CHIP	104	Z	50V
C453	CERAMIC, CHIP	104	Z	50V
C456	CERAMIC, CHIP	104	Z	50V
C457	CERAMIC, CHIP	104	Z	50V
C458	CERAMIC, CHIP	18	J	16V
C459	CERAMIC, CHIP	472	K	50V
C460	CERAMIC, CHIP	223	Z	50V
C461	CERAMIC, CHIP	473	K	50V
C462	CERAMIC, CHIP	472	K	50V
C463	CERAMIC, CHIP	104	Z	50V
C464	CERAMIC, CHIP	104	Z	50V
C465	CERAMIC, CHIP	104	Z	50V
C466	CERAMIC, CHIP	104	Z	50V
C467	ELECT AL, CHIP	470uF		25V
C468	CERAMIC, CHIP	104	Z	50V
C469	ELECT AL, CHIP	47uF		16V
C472	CERAMIC, CHIP	104	Z	50V
C473	CERAMIC, CHIP	104	Z	50V
C474	CERAMIC, CHIP	104	Z	50V
C498	ELECT OS CON	100uF		16V
C499	ELECT OS CON	100uF		16V
C501	ELECT AL, CHIP	47uF		16V
C502	CERAMIC, CHIP	104	Z	50V
C543	ELECT AL, CHIP	10uF		16V
C568	CERAMIC, CHIP	104	Z	50V
C569	ELECT AL, CHIP	47uF		16V
C801	CERAMIC, CHIP	104	Z	50V
C802	ELECT AL, CHIP	22uF		16V
C804	ELECT AL, CHIP	10uF		16V
C805	CERAMIC, CHIP	104	Z	50V
C813	ELECT AL, CHIP	22uF		16V

Ref.No	Description		Remark	
C851	CERAMIC, CHIP	104	Z	50V
C852	CERAMIC, CHIP	104	Z	50V
C853	ELECT AL, CHIP	47uF		16V
C886	CERAMIC, CHIP	104	Z	50V
C901	CERAMIC, CHIP	104	Z	50V
C902	ELECT AL, CHIP	22uF		16V
C952	CERAMIC, CHIP	104	Z	50V
C1012	CERAMIC, CHIP	474	Z	16V
C1014	CERAMIC, CHIP	474	Z	16V
C1015	CERAMIC, CHIP	474	Z	16V
C1016	CERAMIC, CHIP	474	Z	16V
C1017	CERAMIC, CHIP	474	Z	16V
C1862	CERAMIC, CHIP	474	Z	16V
C1863	CERAMIC, CHIP	474	Z	16V
C1864	CERAMIC, CHIP	474	Z	16V
C1865	CERAMIC, CHIP	474	Z	16V
C1866	CERAMIC, CHIP	474	Z	16V
C1867	CERAMIC, CHIP	474	Z	16V
C1868	CERAMIC, CHIP	474	Z	16V
C1869	CERAMIC, CHIP	474	Z	16V
C1870	CERAMIC, CHIP	474	Z	16V
C1871	CERAMIC, CHIP	104	Z	50V
C1872	CERAMIC, CHIP	104	Z	50V
C1873	CERAMIC, CHIP	104	Z	50V
C1874	CERAMIC, CHIP	104	Z	50V
C1875	CERAMIC, CHIP	474	Z	16V
C1876	ELECT AL, CHIP	10uF		16V
C1877	ELECT AL, CHIP	10uF		16V
C1878	CERAMIC, CHIP	103	K	50V
C1879	CERAMIC, CHIP	103	K	50V
C1880	CERAMIC, CHIP	103	K	50V
C1884	ELECT AL, CHIP	10uF		16V
C1885	CERAMIC, CHIP	474	Z	16V
C1887	CERAMIC, CHIP	224	Z	25V
C1888	CERAMIC, CHIP	224	Z	25V
C1889	CERAMIC, CHIP	224	Z	25V
C1890	CERAMIC, CHIP	104	Z	50V
C1892	CERAMIC, CHIP	104	Z	50V
C1893	CERAMIC, CHIP	104	Z	50V
C1894	ELECT AL, CHIP	47uF		16V
C1895	ELECT AL, CHIP	0.47uF		16V
C1896	CERAMIC, CHIP	222		50V
C1898	ELECT AL, CHIP	47uF		16V
C1906	CERAMIC, CHIP	105	Z	16V
C1907	CERAMIC, CHIP	103	K	50V

<FERRITE BEAD>

L1	BEAD, CHIP	60	2012
L2	BEAD, CHIP	60	2012
L3	BEAD, CHIP	60	2012
L4	BEAD, CHIP	60	2012
L5	BEAD, CHIP	60	2012
L13	BEAD, CHIP	60	2012
L16	BEAD, CHIP	60	2012
L17	BEAD, CHIP	60	2012
L18	BEAD, CHIP	60	2012
L19	BEAD, CHIP	60	2012
L24	BEAD, CHIP	60	2012
L25	BEAD, CHIP	60	2012
L28	BEAD, CHIP	60	2012
L501	BEAD, CHIP	60	2012
L808	BEAD, CHIP	60	2012
L1804	BEAD, CHIP	60	2012

<DIODE>

D1	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D2	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D3	DIODE, CHIP	MA111	SMT3
D4	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D5	DIODE, CHIP	MA111	SMT3
D7	DIODE, CHIP	MA111	SMT3
D43	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D47	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D53	DIODE, CHIP	MA111	SMT3
D69	ZENER DIODE, CHIP	RLZ3.3B	UMD2
D70	ZENER DIODE, CHIP	RLZ3.3B	UMD2
D71	ZENER DIODE, CHIP	RLZ3.3B	UMD2
D72	DIODE, CHIP	MA111	SMT3
D73	DIODE, CHIP	MA111	SMT3
D74	DIODE, CHIP	MA111	SMT3
D139	DIODE, CHIP	MA111	SMT3
D140	DIODE, CHIP	MA111	SMT3
D141	DIODE, CHIP	MA111	SMT3
D481	DIODE, CHIP	MA111	SMT3
D901	ZENER DIODE, CHIP	RLZ5.6B	UMD2
D905	ZENER DIODE, CHIP	RLZ3.9B	LLDS
D1001	DIODE, CHIP	MA111	SMT3
D1002	DIODE, CHIP	MA111	SMT3

<TRANSISTOR>

Q1	TRANSISTOR, CHIP	KSA1182	SOT-23
Q3	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q4	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q5	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q6	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q7	TRANSISTOR, CHIP	DTC144EKA	SOT-23
Q12	TRANSISTOR, CHIP	DTC144EKA	SOT-23
Q21	TRANSISTOR, CHIP	DTC144EKA	SOT-23
Q22	TRANSISTOR, CHIP	DTC144EKA	SOT-23
Q33	TRANSISTOR, CHIP	KSA1182	SOT-23
Q37	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q70	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q801	TRANSISTOR, CHIP	2SB1121-ST	SOT-23
Q802	TRANSISTOR, CHIP	2SB1121-ST	SOT-23
Q903	TRANSISTOR, CHIP	KSA1182	SOT-23
Q1008	TRANSISTOR, CHIP	KSA1182	SOT-23
Q1009	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q1010	TRANSISTOR, CHIP	KSA1182	SOT-23
Q1011	TRANSISTOR, CHIP	KSC1623-G	SOT-23
Q1013	TRANSISTOR, CHIP	KSA1182	SOT-23
Q1014	TRANSISTOR, CHIP	KSA1182	SOT-23

<IC>

IC1	IC, CHIP	FST3125	SOIC-14
IC2	IC, CHIP	74HC4538D	SO16
IC3	IC, CHIP	FST3125	SOIC-14
IC4	IC, CHIP	TEA6425	SO20L
IC5	IC, CHIP	74HC4538D	SO16
IC6	IC, CHIP	74HC4538D	SO16
IC7	IC, CHIP	74HC4053D	SO16
IC8	IC, CHIP	74HC4053D	SO16
IC9	IC, CHIP	74HC4053D	SO16
IC11	IC, CHIP	CXA1875AM-T4	SOP-16

Ref.No	Description		Remark
IC13	IC, CHIP	GA1117-2.5ST	SOT-223
IC14	IC, CHIP	TDA9181T	SO16
IC15	IC	TDA9141	SOT-232
IC16	IC, CHIP	CXA2171Q	QFP
IC19	IC, CHIP	SDA5550M	PMQFP100
IC20	IC, CHIP	SST39VF040	32-LEADPLCC
IC21	IC, CHIP	AT24C32AN	SOIC-8
IC22	IC, CHIP	74HC4538D	SO16
IC23	IC, CHIP	MAX1232	SOP8
IC24	IC, CHIP	GM7808TC3R	TO252
IC25	IC, CHIP	74HC4053D	SO16
IC37	IC	KIA7809	TO-220
IC38	IC, CHIP	14070B	SOIC-14
IC39	IC, CHIP	14011B	SOIC-14
IC40	IC, CHIP	74HC4053D	SO16
IC43	IC, CHIP	74HC4538D	SO16
IC66	IC, CHIP	GA1117-3.3ST	SOT-223
IC410	IC, CHIP	MC74HC04A	SOIC-14
IC501	IC, CHIP	TDA4661T	SO16
IC802	IC, CHIP	CXA1875AM-T4	SOP-16
IC806	IC, CHIP	EL4511 CU	QSOP-24
IC1804	IC, CHIP	CXA2101Q	QFP

<CRYSTAL>

X2	CRYSTAL	6MHz	
X3	CRYSTAL	4.43MHz	
X4	CRYSTAL	4MHz	
X5	CRYSTAL	3.579545MHz	
X801	CRYSTAL	32.768KHz	

<CONNECTOR>

CN10	CONNECTOR	10PIN	SMW-200-10P
CN12	CONNECTOR	3PIN	SMW-200-3P
CN21	CONNECTOR	9PIN	SMW-200-9P
CN201	CONNECTOR	30PIN	SMW-200-30P
CN202	CONNECTOR	15PIN	SMW-200-15P
CN203	CONNECTOR	9PIN	SMW-200-9P
CN441	CONNECTOR	30PIN	SMW-200-30P

A기판

<RESISTOR>

R1	RES, CARBON	1.2K	5%	1/6W
R2	RES, CARBON	3.3K	5%	1/6W
R3	RES, CARBON	1K	5%	1/6W
R4	RES, CARBON	22	5%	1/2W
R10	RES, CARBON	3.3K	5%	1/6W
R11	RES, CARBON	12K	5%	1/6W
R12	RES, CARBON	10K	5%	1/6W
R13	RES, CARBON	0.82	5%	1/2W
R14	RES, CARBON	3.3K	5%	1/6W
R15	RES, CARBON	3.3K	5%	1/6W
R16	RES, CARBON	4.7K	5%	1/6W
R17	RES, CARBON	8.2K	5%	1/6W
R18	RES, CARBON	9.1K	5%	1/6W
R20	RES, CARBON	10K	5%	1/6W
R21	RES, CARBON	10K	5%	1/6W
R23	RES, CARBON	10K	5%	1/6W
R24	RES, CARBON	220	5%	1/6W
R25	RES, CARBON	220	5%	1/6W
R26	RES, CARBON	10K	5%	1/6W
R27	RES, CARBON	1.5K	5%	1/6W
R28	RES, CARBON	10K	5%	1/6W
R29	RES, CARBON	4.7K	5%	1/6W
R30	RES, CARBON	2.2K	5%	1/6W
R31	RES, CARBON	4.7K	5%	1/6W
R32	RES, CARBON	0		1/6W
R33	RES, CARBON	0		1/6W
R35	RES, CARBON	1.5K	5%	1/6W
R36	RES, CARBON	10K	5%	1/6W
R37	RES, CARBON	1K	5%	1/6W
R38	RES, CARBON	330	5%	1/6W
R39	RES, CARBON	10K	5%	1/6W
R40	RES, CARBON	5.6K	5%	1/6W
R42	RES, CARBON	5.6K	5%	1/6W
R88	RES, CARBON	180K	5%	1/2W
R89	RES, CARBON	180K	5%	1/2W
R90	RES, CARBON	8.2M	5%	1/2W
R94	RES, CARBON	3.3K	5%	1/2W
R96	RES, MATAL OXIDE	15	5%	2W
R97	RES, CARBON	4.7M	5%	1/6W
R98	RES, MATAL OXIDE	220	5%	3W
R99	RES, CARBON	200	5%	1/6W
R100	RES, CARBON	15K	5%	1/2W
R114	RES, CARBON	10K	5%	1/6W
R131	RES, MATAL OXIDE	0.56	5%	3W
R132	RES, MATAL OXIDE	10	5%	3W
R133	RES, MATAL OXIDE	0.56	5%	3W
R134	RES, CARBON	15K	5%	1/6W
R135	RES, CARBON	10K	5%	1/6W
R136	RES, CARBON	6.8K	5%	1/6W
R137	RES, CARBON	100	5%	1/6W
R138	RES, CARBON	1K	5%	1/6W
R139	RES, CARBON	56	5%	1/6W
R140	RES, CARBON	56	5%	1/6W
R142	RES, CARBON	10K	5%	1/6W
R143	RES, CARBON	2.2K	5%	1/6W
R149	RES, CARBON	2.2K	5%	1/6W
R170	RES, MATAL OXIDE	56K	5%	2W
R171	RES, CARBON	2.2	5%	1/2W
R174	RES, CARBON	0		1/6W
R178	RES, CARBON	330	5%	1/2W
R179	RES, MATAL OXIDE	10	5%	2W
R180	RES, CARBON	10K	5%	1/6W
R182	RES, CARBON	47	5%	1/4W
R185	RES, CARBON	22K	5%	1/2W
R186	RES, CARBON	1K	5%	1/6W
R191	RES, CARBON	1.2K	5%	1/6W
R192	RES, CARBON	330K	5%	1/2W
R193	RES, CARBON	330K	5%	1/2W
R194	RES, MATAL OXIDE	10K	5%	3W
R200	RES, CARBON	1.2K	5%	1/6W
R201	RES, CARBON	1K	5%	1/6W
R202	RES, CARBON	18K	5%	1/6W
R203	RES, CARBON	18K	5%	1/6W
R204	RES, CARBON	1K	5%	1/6W
R205	RES, CARBON	1.2K	5%	1/6W
R206	RES, CARBON	18K	5%	1/6W
R207	RES, CARBON	1K	5%	1/6W
R208	RES, CARBON	68K	5%	1/6W
R209	RES, CARBON	150K	5%	1/6W
R210	RES, CARBON	2K	5%	1/6W
R211	RES, CARBON	10K	5%	1/6W
R212	RES, CARBON	75K	5%	1/4W
R213	RES, CARBON	27K	5%	1/4W

Ref.No	Description		Remark	
R214	RES, CARBON	18K	5%	1/4W
R215	RES, CARBON	6.8K	5%	1/6W
R216	RES, CARBON	120K	5%	1/6W
R217	RES, CARBON	1.2K	5%	1/6W
R218	RES, CEMAENT	750	5%	5W
R219	RES, CARBON	33K	5%	1/4W
R235	RES, CARBON	1.2K	5%	1/6W
R236	RES, CARBON	5.1K	5%	1/4W
R238	RES, CARBON	4.7K	5%	1/2W
R239	RES, CARBON	33	5%	1/2W
R240	RES, MATAL OXIDE	0.33	5%	3W
R241	RES, CARBON	100K	5%	1/4W
R242	RES, CARBON	1.5K	5%	1/6W
R243	RES, CARBON	5.6K	5%	1/6W
R270	RES, CARBON	10K	5%	1/6W
R271	RES, CARBON	3K	5%	1/6W
R321	RES, CARBON	1.5K	5%	1/6W
R322	RES, CARBON	10K	5%	1/6W
R325	RES, CARBON	390K	5%	1/6W
R326	RES, CARBON	0		1/6W
R334	RES, MATAL OXIDE	470	5%	3W
R335	RES, CARBON	22K	5%	1/4W
R344	RES, MATAL OXIDE	10	5%	1W
R345	RES, CARBON	150K	5%	1/2W
R467	RES, CARBON	5.1K	5%	1/6W
R468	RES, CARBON	1K	5%	1/6W
R469	RES, CARBON	12K	5%	1/6W
R481	RES, CARBON	0	5%	1/4W
R482	RES, CARBON	82K	5%	1/4W
R483	RES, CARBON	10K	5%	1/6W
R484	RES, CARBON	8.2K	5%	1/6W
R490	RES, MATAL OXIDE	240	5%	2W
R491	RES, MATAL OXIDE	1K	5%	3W
R492	RES, MATAL OXIDE	100K	5%	3W
R493	RES, CARBON	1.2K	5%	1/6W
R494	RES, CARBON	18K	5%	1/6W
R495	RES, CARBON	1K	5%	1/6W
R620	RES, CARBON	150K	5%	1/2W
R621	RES, CARBON	510	5%	1/2W
R622	RES, CARBON	1.5K	5%	1/6W
R651	RES, CARBON	100K	5%	1/4W
R652	RES, CARBON	6.8K	5%	1/4W
R653	RES, CARBON	5.6K	5%	1/4W
R654	RES, CARBON	3K	5%	1/4W
R655	RES, CARBON	220K	5%	1/4W
R656	RES, CARBON	1K	5%	1/6W
R658	RES, CARBON	220	5%	1/4W
R806	RES, CARBON	7.5K	5%	1/4W
R807	RES, CARBON	1	5%	1/2W
R808	RES, CARBON	680	5%	1/2W
R815	RES, MATAL OXIDE	1	5%	1W
R833	RES, CARBON	2K	5%	1/2W
R834	RES, CARBON	120	5%	1/4W
R835	RES, CARBON	1.2	5%	1/2W
R836	RES, CARBON	15K	5%	1/6W
R837	RES, CARBON	3K	5%	1/4W
R838	RES, CARBON	100	5%	1/6W
R842	RES, CARBON	20K	5%	1/4W
R1111	RES, MATAL OXIDE	220	5%	3W
R1601	RES, CARBON	10K	5%	1/6W
R1603	RES, CARBON	4.7K	5%	1/6W
R1604	RES, CARBON	4.7K	5%	1/6W
R1605	RES, CARBON	750	5%	1/6W
R1606	RES, CARBON	10K	5%	1/6W

<CAPACITOR>

C6	MYLAR	470nF	100V
C7	MYLAR	56nF	100V
C8	MYLAR	4.7nF	100V
C9	MYLAR	47nF	100V
C12	CERAMIC	10nF	50V
C14	ELECT	220uF	25V
C15	CERAMIC	10nF	50V
C16	ELECT	220uF	16V
C17	ELECT	220uF	16V
C18	CERAMIC	82pF	50V
C19	ELECT	220uF	25V
C20	CERAMIC	10nF	50V
C21	CERAMIC	10nF	50V
C22	ELECT	220uF	16V
C24	CERAMIC	330pF	500V
C25	CERAMIC	1nF	1KV
C27	CERAMIC	1nF	50V
C28	ELECT	47uF	50V
C31	CERAMIC	220pF	1KV
C34	MPP	2uF	250V
C48	ELECT	220uF	25V
C49	MYLAR	10nF	100V
C50	MYLAR	10nF	100V
C72	CERAMIC	100nF	50V
C73	MYLAR	10nF	100V
C74	CERAMIC	1nF	50V
C75	ELECT	4.7uF	50V
C76	MYLAR	27nF	100V
C85	CERAMIC	100nF	50V
C92	ELECT	100uF	16V
C93	ELECT	1uF	50V
C110	MYLAR	1nF	100V
C112	MYLAR	27nF	100V
C113	MYLAR	100nF	100V
C114	ELECT	4.7uF	100V
C115	MYLAR	2.2nF	100V
C116	ELECT	47uF	16V
C117	MYLAR	1nF	100V
C118	ELECT	1uF	50V
C122	MPP	68nF	630V
C123	MYLAR	22nF	100V
C124	MYLAR	1nF	100V
C125	MPP	150nF	400V
C126	ELECT	47uF	16V
C127	METAL	1uF	63V
C128	MYLAR	150nF	100V
C129	ELECT	10uF	16V
C130	ELECT	470uF	16V
C141	CERAMIC	1nF	1KV
C142	CERAMIC	470pF	1KV
C143	ELECT	2.2uF	350V
C145	CERAMIC	10nF	50V
C146	MYLAR	10nF	100V
C147	MYLAR	56nF	100V
C155	ELECT	220uF	100V
C156	ELECT	47uF	50V
C157	CERAMIC	1nF	1KV
C162	CERAMIC	220pF	1KV

Ref.No	Description		Remark
C163	MPP	2uF	250V
C164	CERAMIC	1nF	1KV
C165	METAL	1uF	63V
C166	METAL	1uF	63V
C167	MYLAR	6.8nF	100V
C168	METAL	1uF	63V
C169	ELECT	47uF	16V
C170	ELECT	47uF	16V
C172	METAL	0.22uF	63V
C173	ELECT	220uF	100V
C174	ELECT	47uF	50V
C175	MPP	2uF	250V
C176	MPP	100nF	250V
C179	ELECT	1uF	50V
C180	MYLAR	1.2nF	100V
C181	MYLAR	10nF	100V
C207	CERAMIC	100pF	2KV
C218	MYLAR	1nF	100V
C248	MPP	2.2nF	1.6KV
C249	MPP	2.2nF	1.6KV
C250	CERAMIC	100nF	50V
C252	MPP	68nF	630V
C253	MPP	680nF	250V
C255	MPP	680nF	250V
C256	MPP	680nF	250V
C277	MPP	680nF	250V
C278	MPP	220nF	250V
C531	ELECT	220uF	16V
C601	X-CAP	150nF	275VAC
C602	X-CAP	150nF	275VAC
C603	CERAMIC	2.2nF	250VAC
C604	CERAMIC	2.2nF	250VAC
C607	CERAMIC	100nF	50V
C608	ELECT	220uF	450V
C609	ELECT	22uF	50V
C610	MYLAR	10nF	100V
C611	ELECT	1uF	50V
C612	ELECT	1uF	50V
C613	CERAMIC	220pF	1KV
C614	CERAMIC	10nF	500V
C615	CERAMIC	1nF	500V
C616	CERAMIC	2.2nF	250VAC
C618	ELECT	1000uF	16V
C619	CERAMIC	330pF	500V
C620	ELECT	150uF	16V
C621	ELECT	150uF	16V
C622	ELECT	1000uF	25V
C623	ELECT	1000uF	25V
C625	MYLAR	10nF	100V
C626	ELECT	220uF	16V
C627	ELECT	220uF	25V
C630	CERAMIC	220pF	1KV
C635	CERAMIC	10nF	500V
C651	MYLAR	10nF	100V
C653	MYLAR	5.6nF	100V
C654	ELECT	100uF	25V
C655	CERAMIC	100nF	50V
C656	MYLAR	22nF	100V
C657	MYLAR	22nF	100V
C665	ELECT	220uF	16V
C682	JUMPER		
C806	ELECT	220uF	35V

Ref.No	Description		Remark
C807	METAL	1uF	63V
C808	MYLAR	4.7nF	100V
C809	ELECT	1000uF	25V
C810	METAL	1uF	63V
C811	MYLAR	56nF	100V
C831	MYLAR	3.3nF	100V
C849	ELECT	1000uF	25V
C1602	CERAMIC	10nF	50V
C1603	ELECT	470uF	16V
C1604	CERAMIC	100nF	50V
C1606	ELECT	10uF	16V
C1607	ELECT	1uF	50V
C1608	ELECT	1uF	50V
C1614	ELECT	470uF	16V
C1657	ELECT	220uF	16V
C1658	CERAMIC	10nF	50V
C1659	CERAMIC	10nF	50V
C1660	ELECT	220uF	16V

<COIL>

L1	INDUCTOR	22uH	AL04TB
L2	INDUCTOR	22uH	AL04TB
L502	INDUCTOR	4.7uH	AL04TB

<BEAD>

BD1	BEAD	3550L	
BD2	BEAD	3550L	
BD3	BEAD	3550L	
BD4	BEAD	3550L	
BD5	BEAD	3550L	
BD6	BEAD	3550L	
BD9	BEAD	3550L	
BD11	BEAD	3550L	
BD601	BEAD	3550L	
L1601	BEAD	3550L	

<DIODE>

D1	DIODE	UF4007	DO-41
D2	DIODE	1N4148	DO-35
D5	DIODE	1SS244	SOD27
D10	DIODE	1N4148	DO-35
D11	DIODE	1N4148	DO-35
D16	DIODE	UF4007	DO-41
D17	DIODE	TVR10G	DO-35
D18	DIODE	31DF4	DO-201AD
D19	DIODE	31DF4	DO-201AD
D20	DIODE	31DF4	DO-201AD
D21	DIODE	1N4148	DO-35
D22	DIODE	UF4007	DO-41
D31	DIODE	UF4004	DO-41
D32	DIODE	UF4004	DO-41
D33	DIODE	1N4148	DO-35
D34	DIODE	1N4148	DO-35
D35	DIODE	1N4148	DO-35
D36	DIODE	1N4148	DO-35
D37	DIODE	1N4148	DO-35
D39	DIODE	UF4004	DO-41
C40	DIODE	GUR460L-5700	DO-34
C41	DIODE	GUR460L-5700	DO-34
D42	DIODE	UF4004	DO-41
D137	DIODE	FFAF10U170ST	TO-3PF
D138	DIODE	UF4004	DO-41

Ref.No	Description		Remark
D300	DIODE	1N4148	DO-35
D301	DIODE	1N4148	DO-35
C401	DIODE	GUR460L-5700	DO-34
D405	DIODE	SB540L-570B	DO-34
D421	DIODE	1N4148	DO-35
D422	DIODE	1N4148	DO-35
D601	BRIDGE DIODE	D3SBAB60-4101	
D611	DIODE	31DF4	DO-201AD
D612	DIODE	31DF4	DO-201AD
D621	DIODE	1N4148	DO-35
D804	DIODE	1N4148	DO-35
ZD1	ZENER DIODE	MTZ5.6	DO-35
ZD2	ZENER DIODE	UZ6.2BSB	DO-35
ZD3	ZENER DIODE	MTZ5.6	DO-35
ZD5	ZENER DIODE	MTZ7.5C	DO-35
ZD600	ZENER DIODE	MTZ27D	DO-35
ZD601	ZENER DIODE	MTZ7.5C	DO-35

<TRANSISTOR>

Q3	TRANSISTOR	DTC144ESA	TO-92S
Q4	TRANSISTOR	2N3904	TO-92
Q5	TRANSISTOR	2N3904	TO-92
Q7	TRANSISTOR	2N3904	TO-92
Q8	TRANSISTOR	IRF634B	TO-220
Q10	TRANSISTOR	2N3904	TO-92
Q17	TRANSISTOR	2N3904	TO-92
Q18	TRANSISTOR	2N3906	TO-92
Q19	TRANSISTOR	2N3904	TO-92
Q20	TRANSISTOR	2N3906	TO-92
Q30	TRANSISTOR	2N3904	TO-92
Q31	TRANSISTOR	IFR630	TO-220
Q32	TRANSISTOR	2N3904	TO-92
Q47	TRANSISTOR	IFR630	TO-220
Q48	TRANSISTOR	2N3904	TO-92
Q49	TRANSISTOR	IFR630	TO-220
Q402	TRANSISTOR	2SK2761-01MF	TO-220F15
Q403	TRANSISTOR	IFRFU210	I-PAK
Q404	TRANSISTOR	FJAF6920A	TO-3PF
Q409	TRANSISTOR	IFR630	TO-220
Q412	TRANSISTOR	KSD1616-Y	TO-92
Q416	TRANSISTOR	2N3904	TO-92
Q417	TRANSISTOR	2N3904	TO-92
Q423	TRANSISTOR	2N3906	TO-92
Q601	TRANSISTOR	2N3904	TO-92
Q604	TRANSISTOR	KSD1616-Y	TO-92
Q1601	TRANSISTOR	DTA144ESA	TO-92S
Q1602	TRANSISTOR	DTC144ESA	TO-92S

<IC>

IC1	IC	TL494CN	16-DIP
IC3	IC	GM66150-5.0T	TO-220
IC4	IC	NJM4558	DIP8
IC5	IC	KA7809	TO-220
IC10	IC	STV9118	SDIP-32
IC12	IC	KIA7905	TO-220
IC36	IC, CHIP	CXA1875AM-T4	SOP-16
IC63	IC	KA78R12	TO-220
IC301	IC	KA2142	10-SIP H/S
IC601	IC	8S0965RCB-YDTU	TO-220-5L
IC602	IC	KA78R12	TO-220
IC605	IC	KIA431CLP	TO-92

Ref.No	Description		Remark
IC1601	IC	AN7512	HDIPO16-P
IC1610	IC	GM66150-5.0T	TO-220
Q2	IC	KA7809	TO-220

<PHOTO COUPLER>

PS601	PHOTO COUPLER	PC817	1-CHANNEL

<VOLUME>

RV1	VR	50K	NVZ6TLT-503

<F.B.T>

T501	FBT	DWM-50623	

<FUSE>

FH1	FUSE	CERAMIC(T4AH250V)	
FH101	FUSE	CERAMIC(T4AH250V)	

<FUSE CILP>

FH1	FUSE CILP	51F	
FH101	FUSE CILP	51F	

<RELAY>

RL601	RELAY	LK1aF-12V(ALK3213)	

<TRANSFORMER>

T1	H-PULSE	HPT-150	
T401	DRIVE	00027	
T402	LINERAITY	HLR1515B	
T601	S.R.T	HMT-150	
T602	SYNC	LF-702	
L6	TRODIAL COIL	220uH	
L14	CHOKE COIL	100uH	
L601	LINE-FILTER	LF-1700	

<THERMISTOR>

TH601	THERMISTOR PTC	02090Q	
TH602	THERMISTOR NTC	DSC8D-11	

<CONNECTOR>

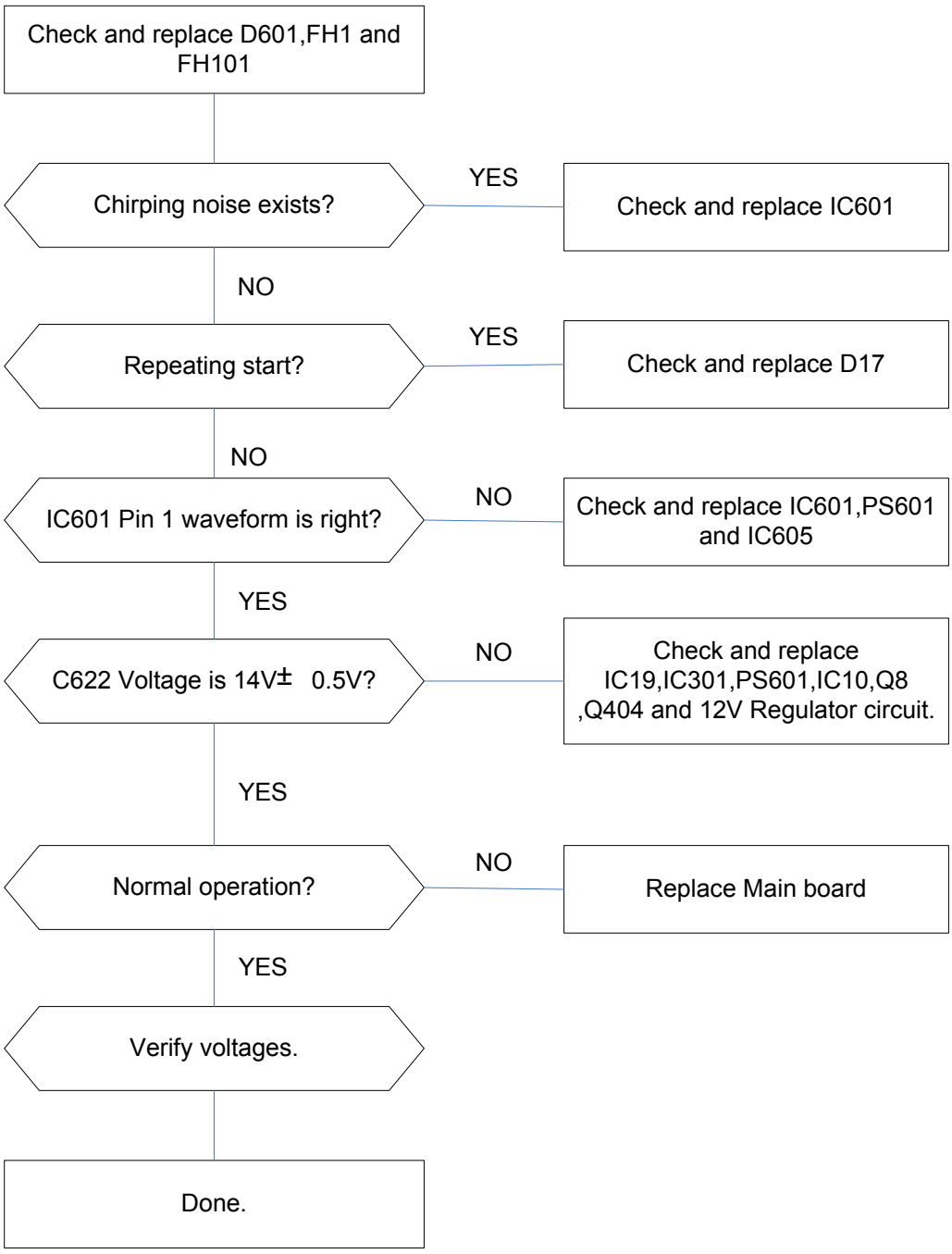
CN2	CONNECTOR	2PIN	YFW 800-02
CN3	CONNECTOR	1PIN	YFW 800-01
CN6	CONNECTOR	30PIN	SMW-200-30P
CN7	CONNECTOR	4PIN	SMW-200-4P
CN14	CONNECTOR	4PIN	SMW-200-4P
CN20	CONNECTOR	4PIN	YFW 800-04
CN107	CONNECTOR	2PIN	SMW-200-2P
CN603	CONNECTOR	2PIN	YFW 800-02

11. Troubleshooting

11-1 Parts Level Troubleshooting

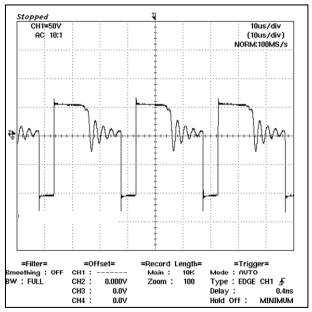
Notes : Check the following circuits
. No raster appears : Power circuit, Horizontal output circuit.
. High voltage develops but no raster appears : Video output circuits.
. High voltage does not develop : Horizontal output circuits.

11-1-1 No Power Supply

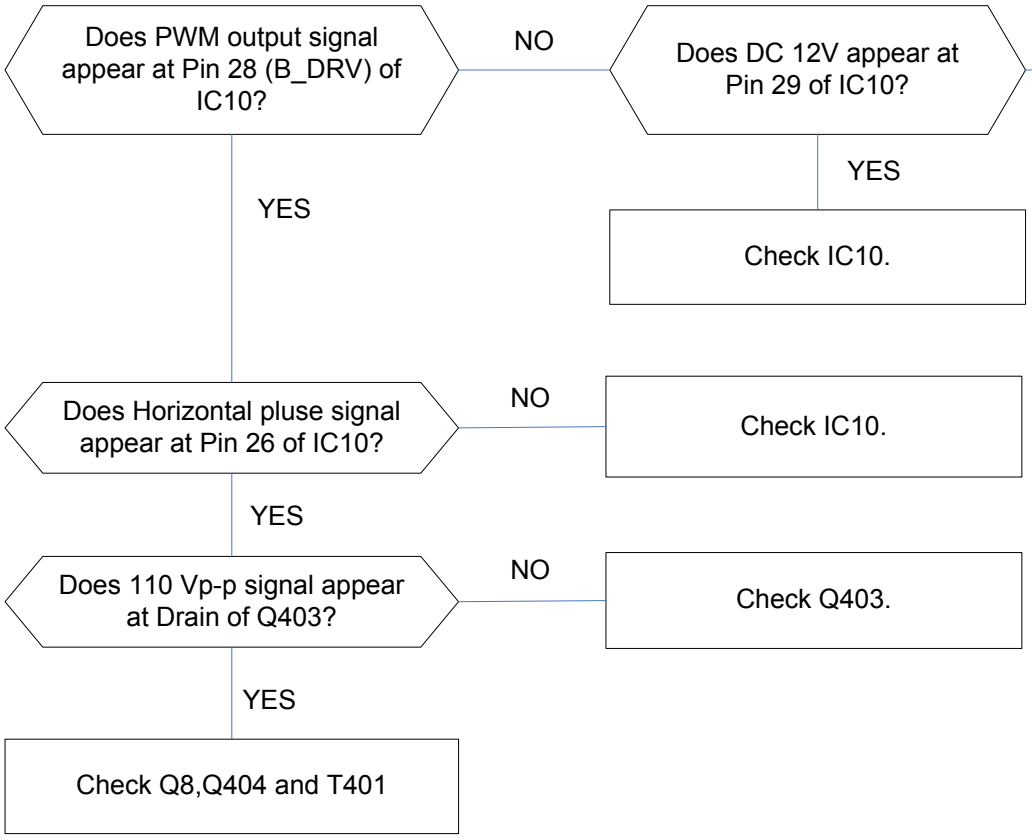


WAVEFORMS

IC601 Pin 1

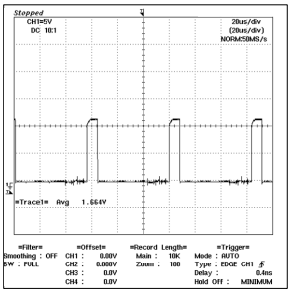


11-1-2 H_Deflection Failure

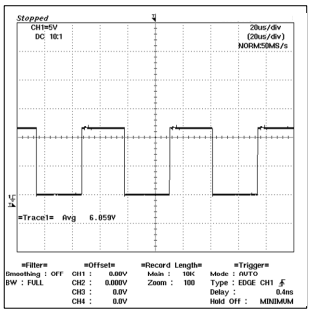


WAVEFORMS

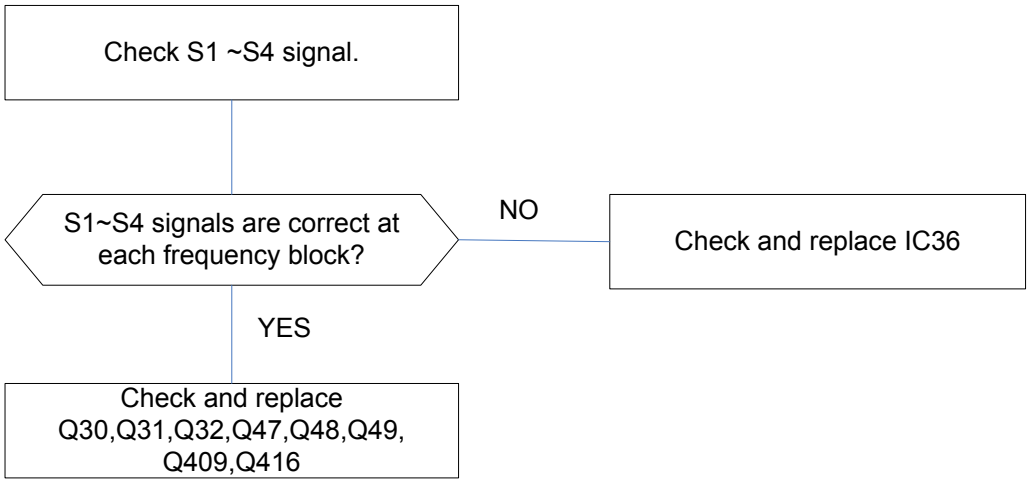
IC10 Pin 28



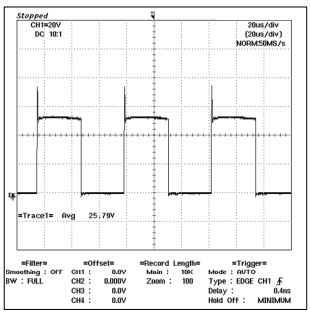
IC10 Pin 26



11-1-3 S Correction Failure

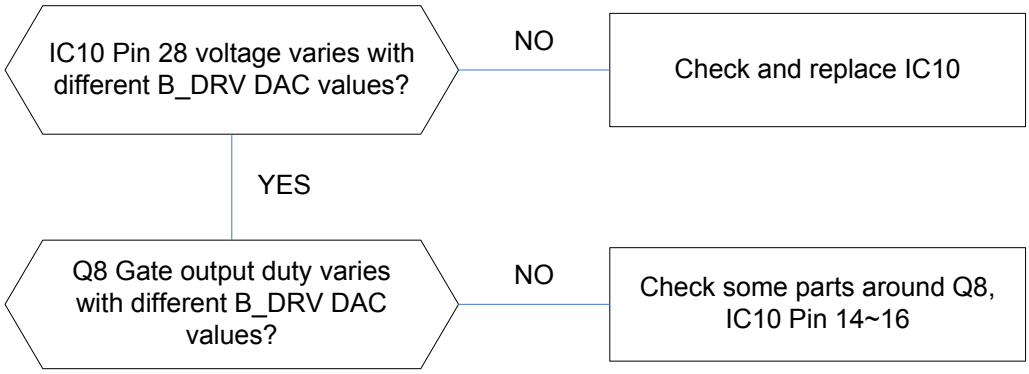


Q403 Drain

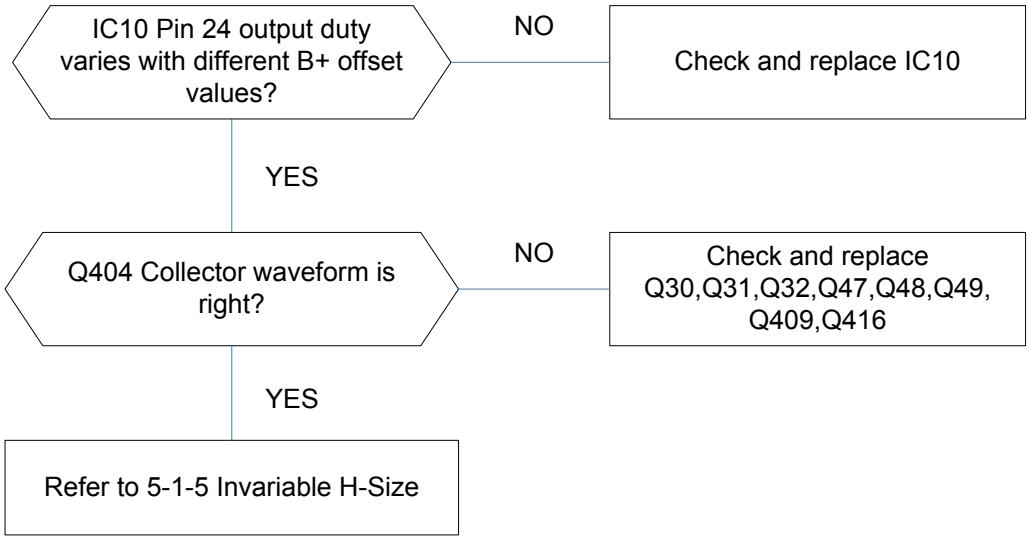


11-1-4 H-Lin. Failure > Check and Replace T402

11-1-5 Invariable H-Size

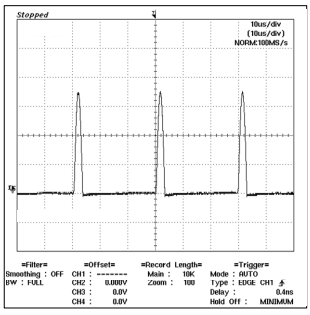


11-1-6 Abnormal H-Size

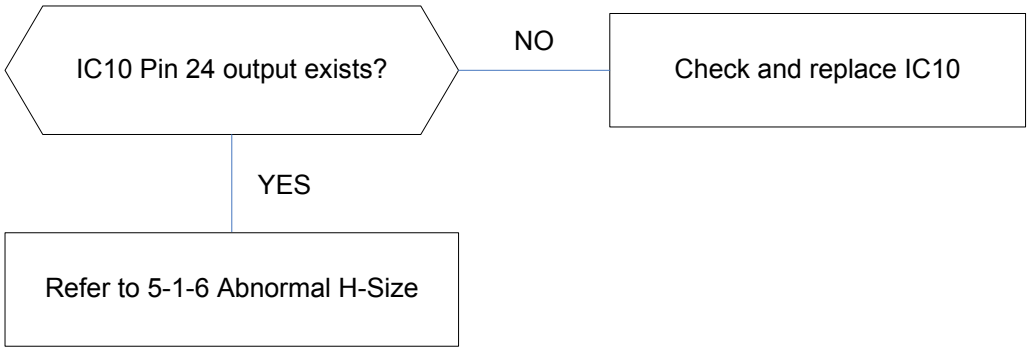


WAVEFORMS

Q404 Collector

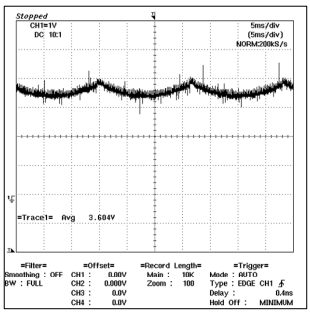


11-1-7 Side Pin or Trap Failure

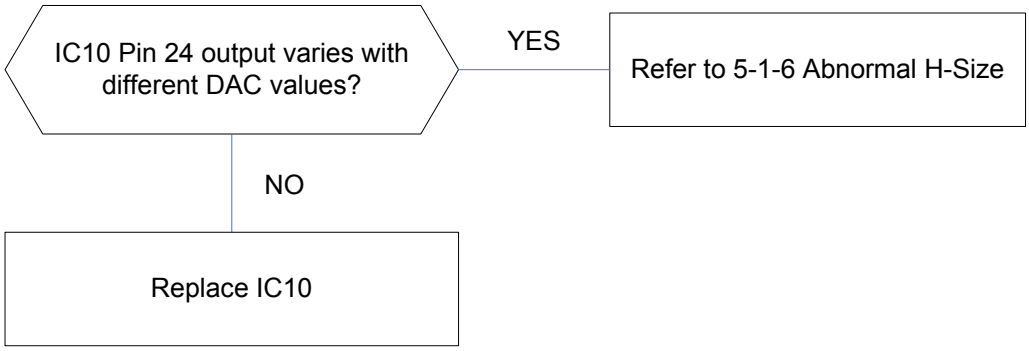


WAVEFORMS

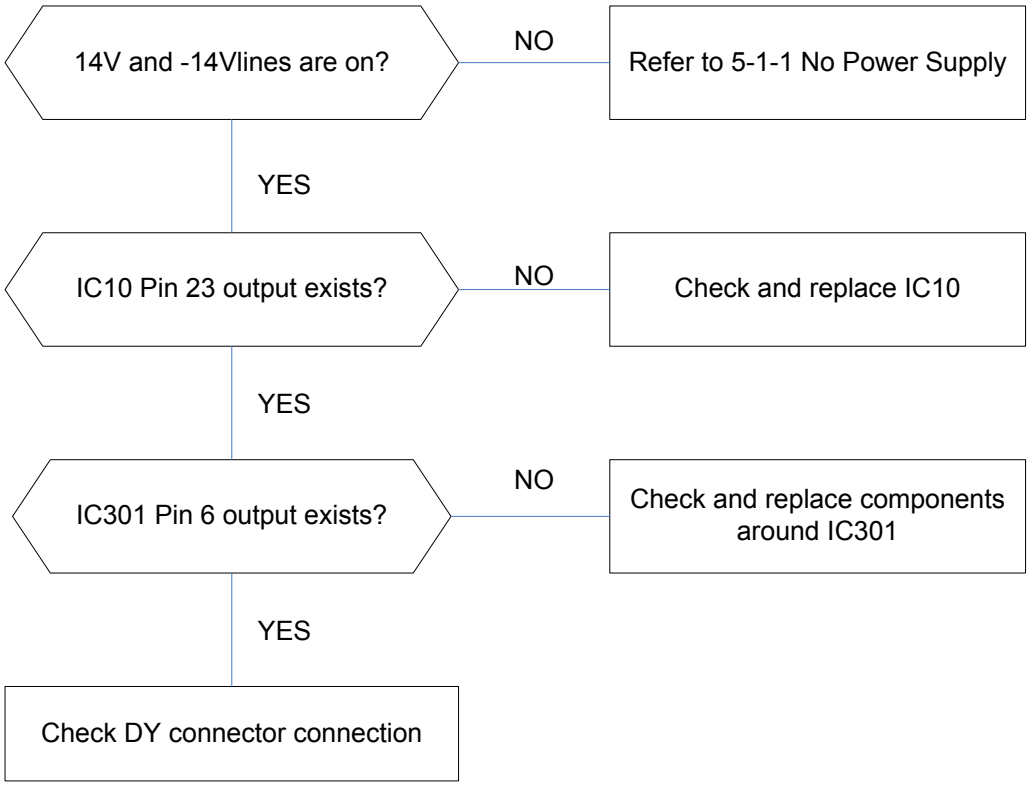
IC10 Pin 24



11-1-8 Para or Pin Balance Failure

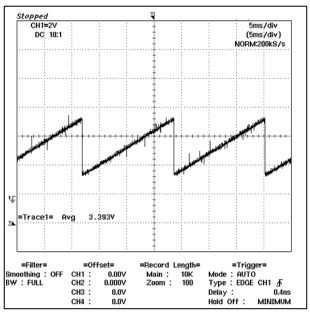


11-1-9 V Deflection Failure

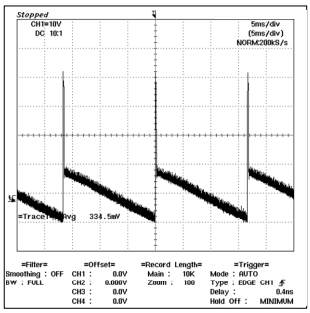


WAVEFORMS

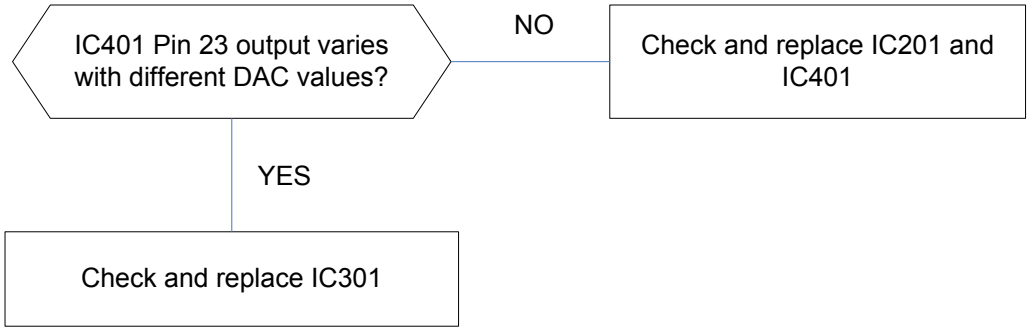
IC10 Pin 23



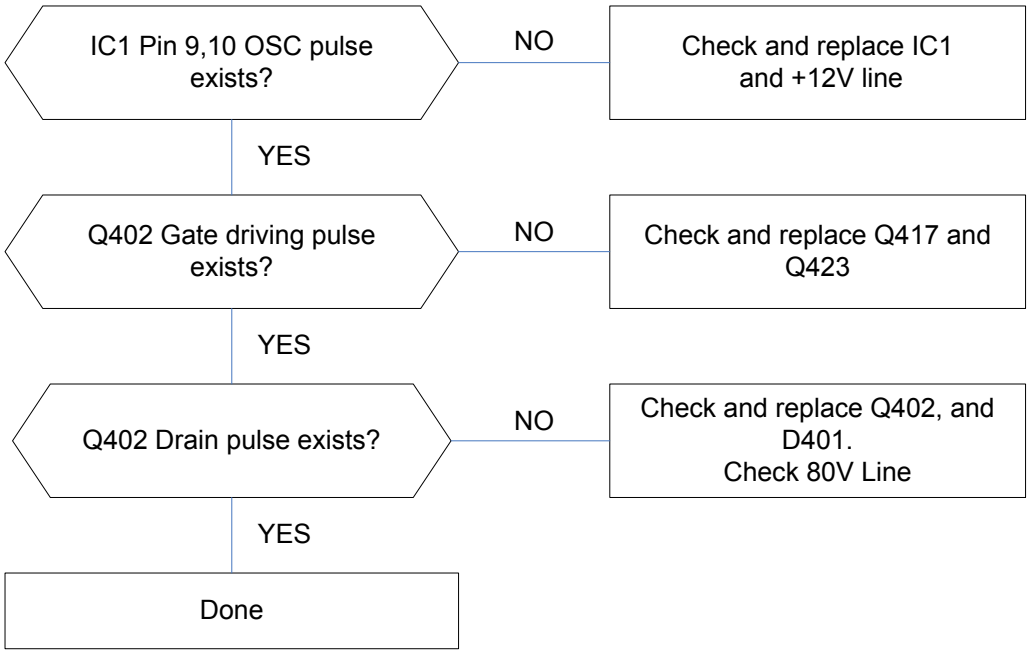
IC301 Pin 6



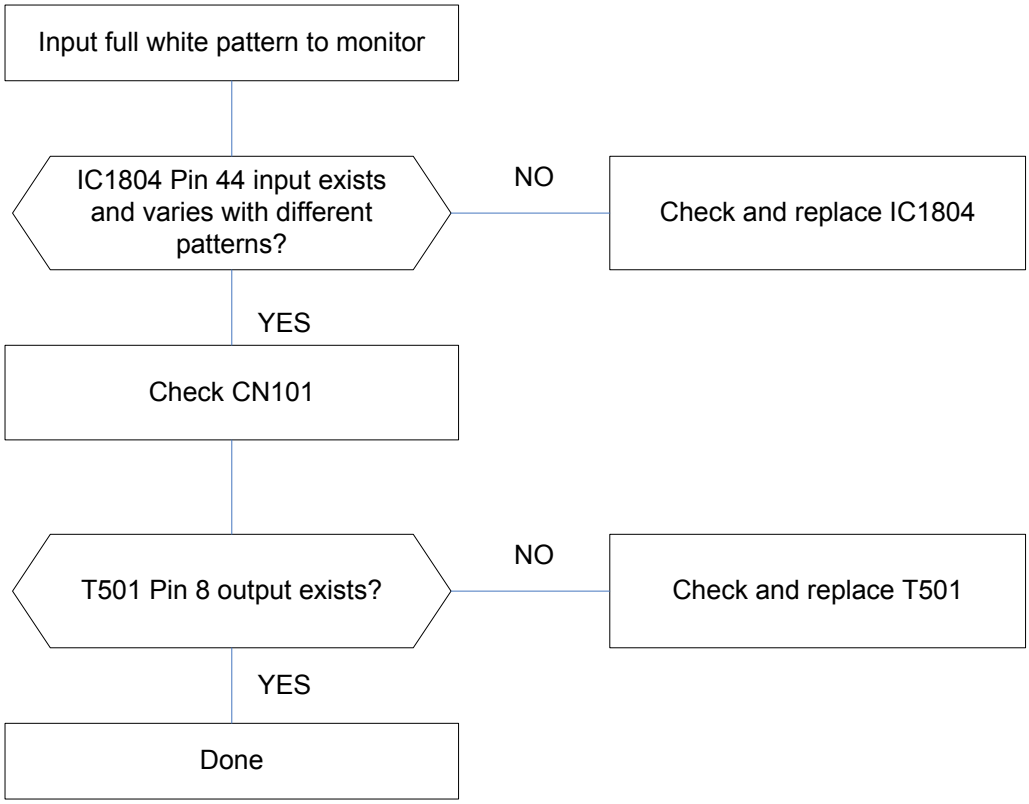
11-1-10 V Size or Position Variation Failure



11-1-11 High Voltage Failure

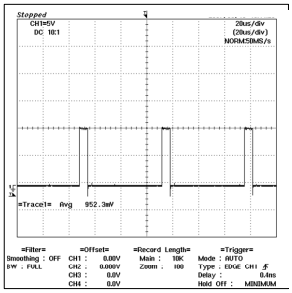


11-1-12 ABL Failure

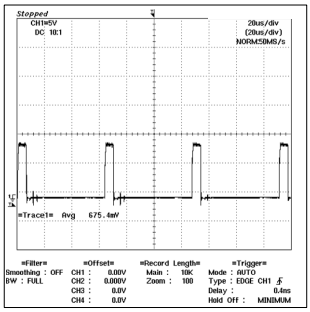


WAVEFORMS

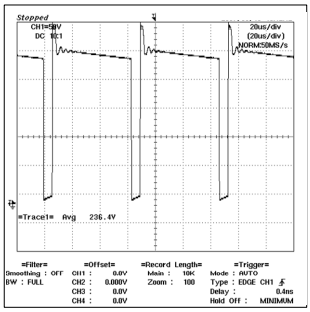
IC1 Pin 9,10



Q402 Gate



Q402 Drain



11-1-13 No Video

Check signal cable and connection

IC19 Pin 57,58,59 output are right?
NO → Refer to 5-1-15 osd failure

YES

IC1804 PIN 35,37,39 outputs are right? (white pattern)
NO → Refer to 5-2-1 No Picture

YES

IC301 Pin 6 output exists?
NO → Check and replace components around IC301

YES

Cathode DC levels are right?
NO → Check +180V line. Check CN104 Pin 4

YES

G2 voltage is right?
NO → Check G2 wire, CRT Socket board and FBT

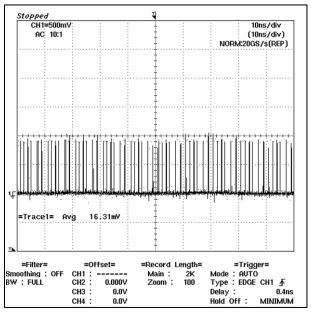
YES

Change CRT

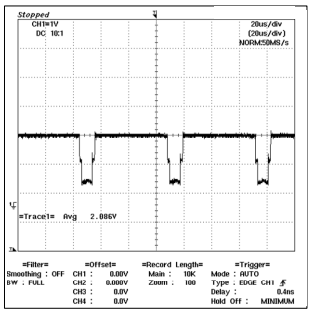
Done

WAVEFORMS

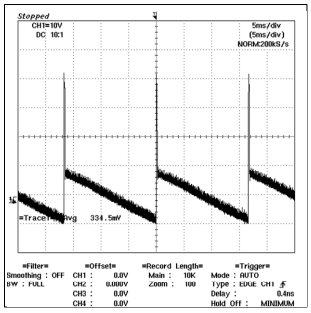
IC19 Pin 57,58,59



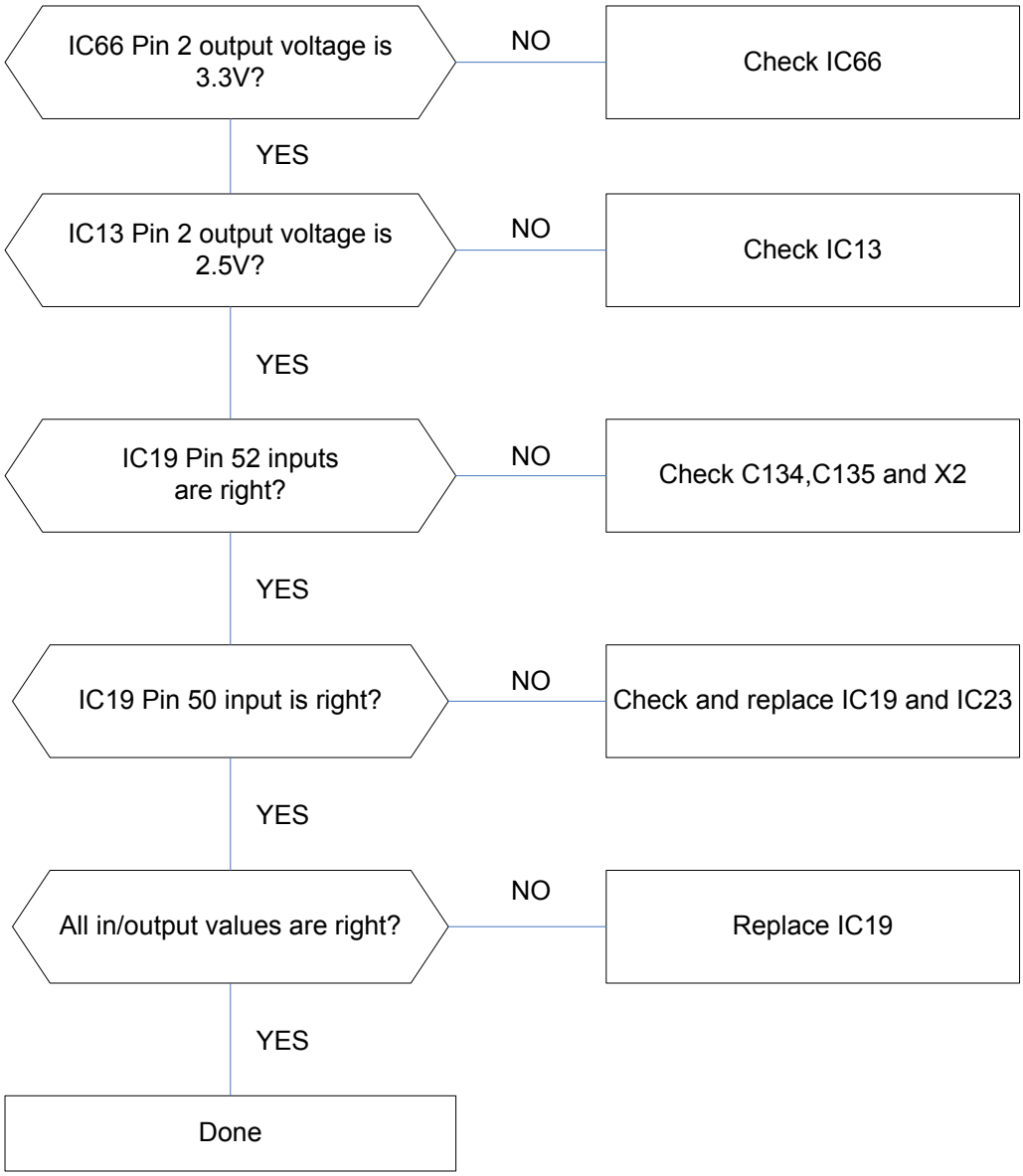
IC1804 Pin 35,37,39



IC301 Pin 6

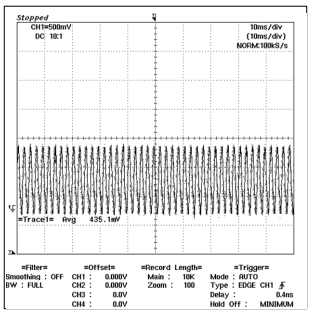


11-1-14 Micom Failure

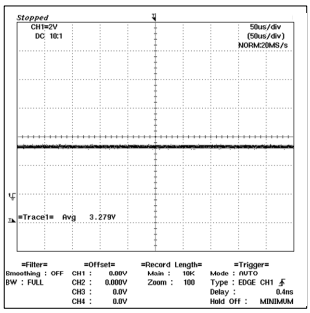


WAVEFORMS

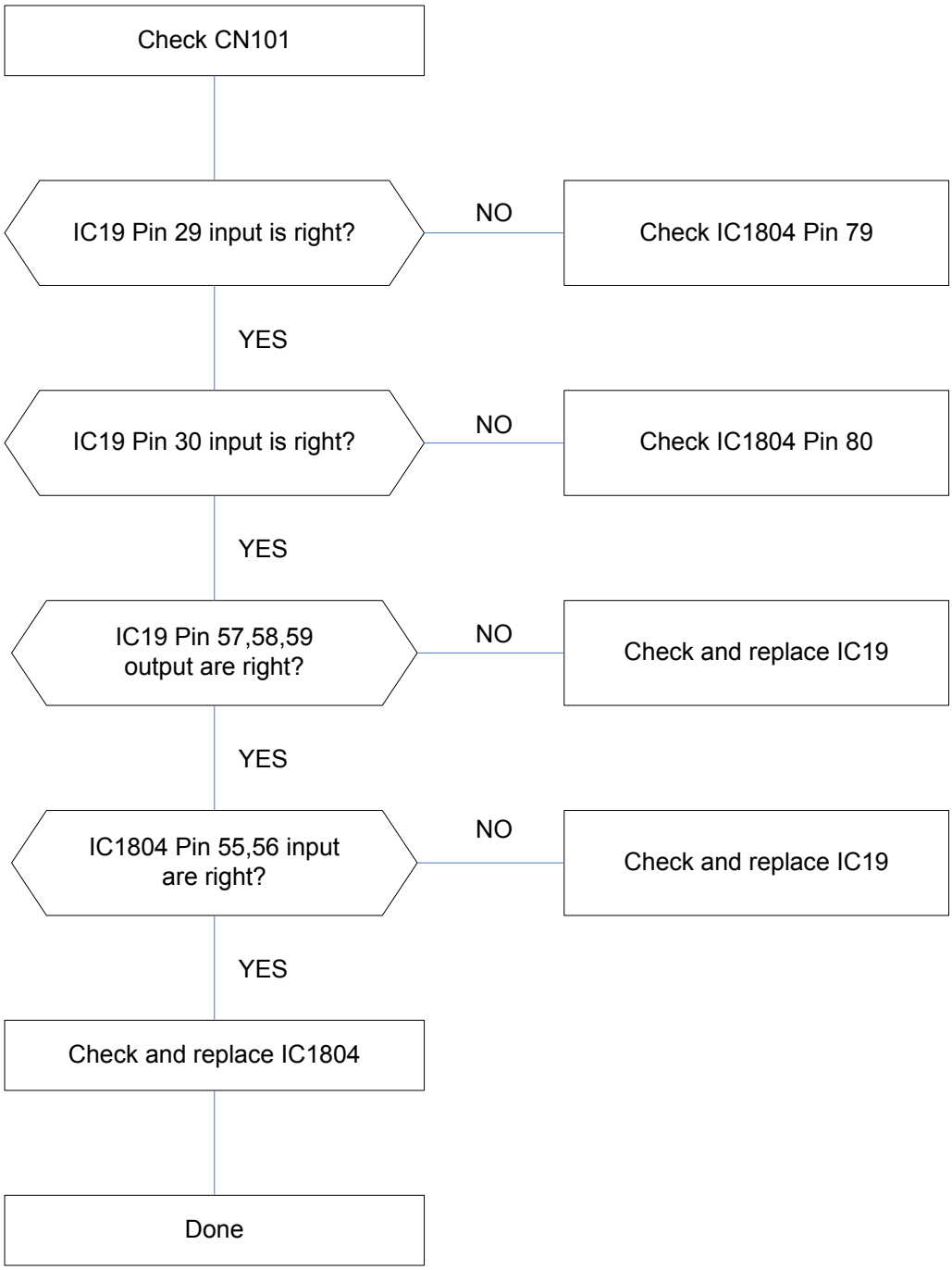
IC19 Pin 52



IC19 Pin 50

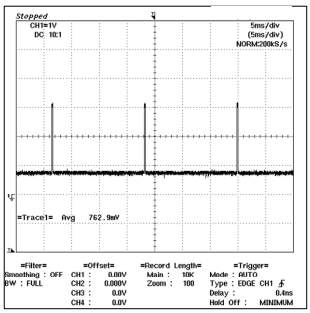


11-1-15 OSD Failure

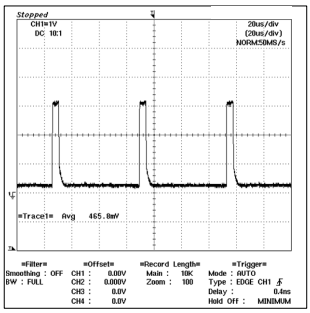


WAVEFORMS

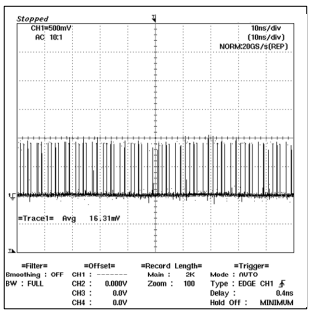
IC19 Pin 29



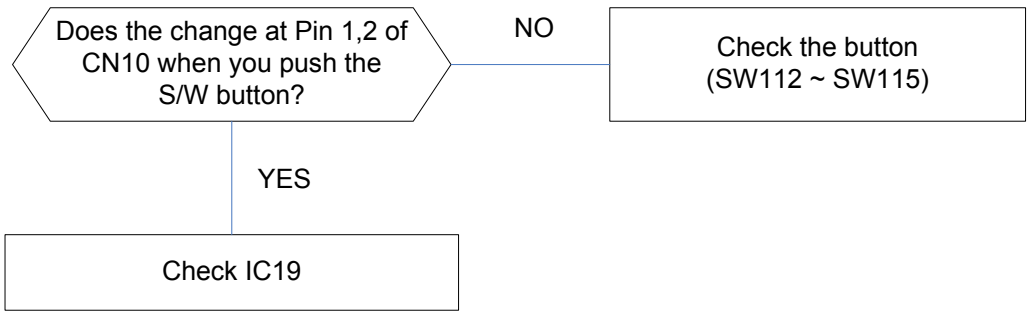
IC19 Pin 30



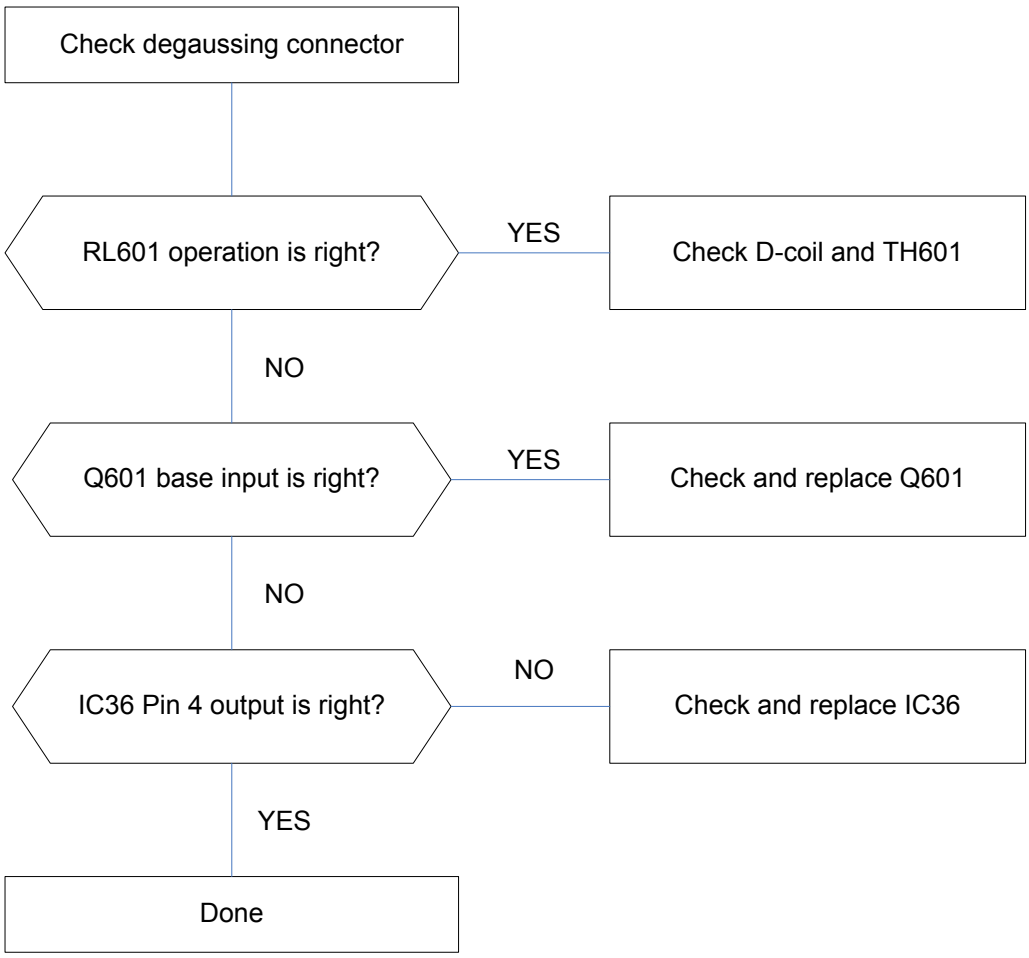
IC19 Pin 57,58,59



11-1-16 User Control Failure

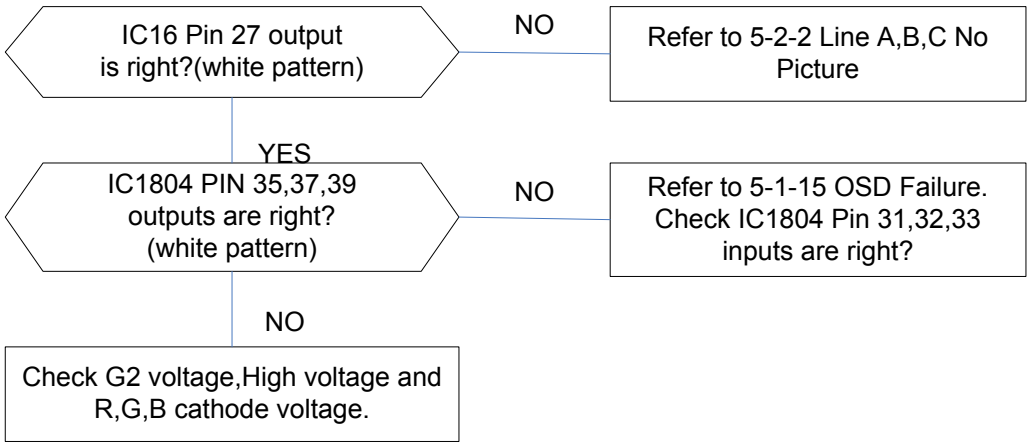


11-1-17 Degaussing Failure



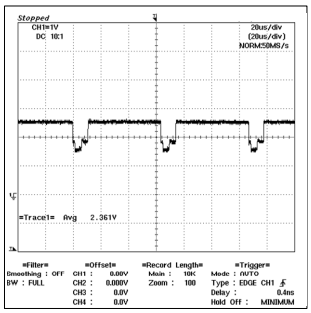
11-2 General Troubleshooting

11-2-1 No Picture

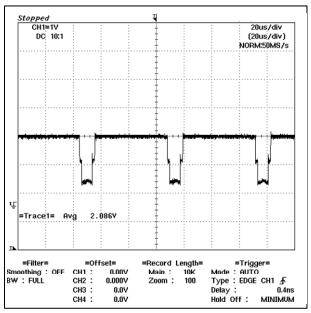


WAVEFORMS

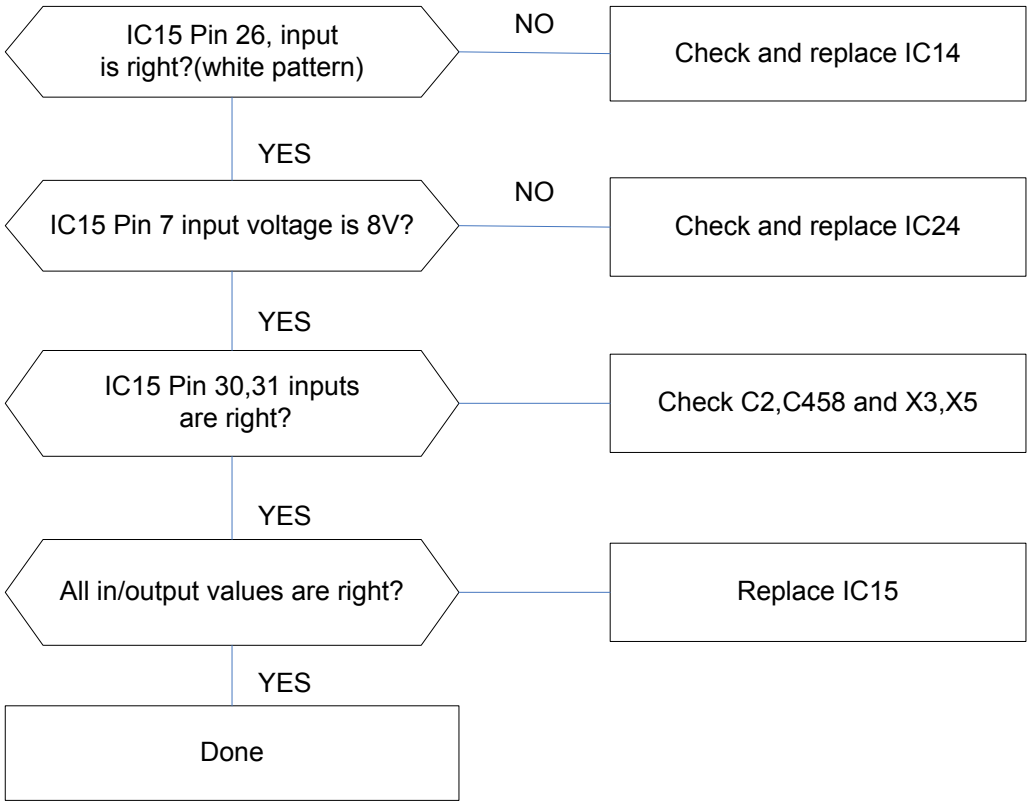
IC16 Pin 27



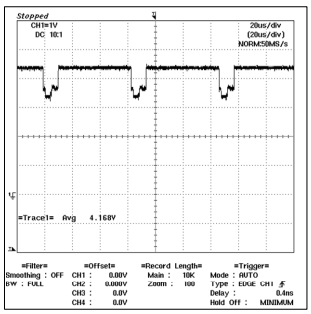
IC1804 Pin 35,37,39



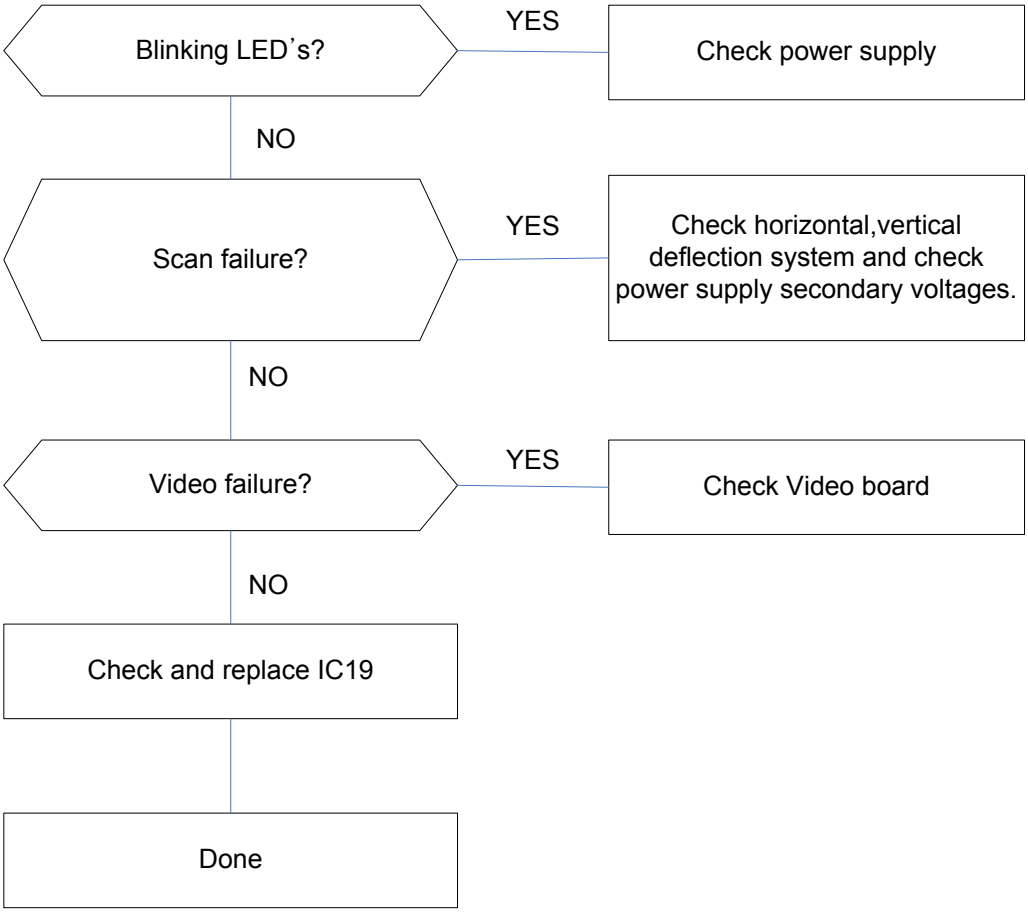
11-2-2 Line A,B,C No Picture



IC15 Pin 26



11-2-3 Shut Down



Developed by

TVLogic

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TEL : +82-2-2026-1333 FAX : +82-2-2026-1339 E-mail : support@tvlogic.co.kr

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